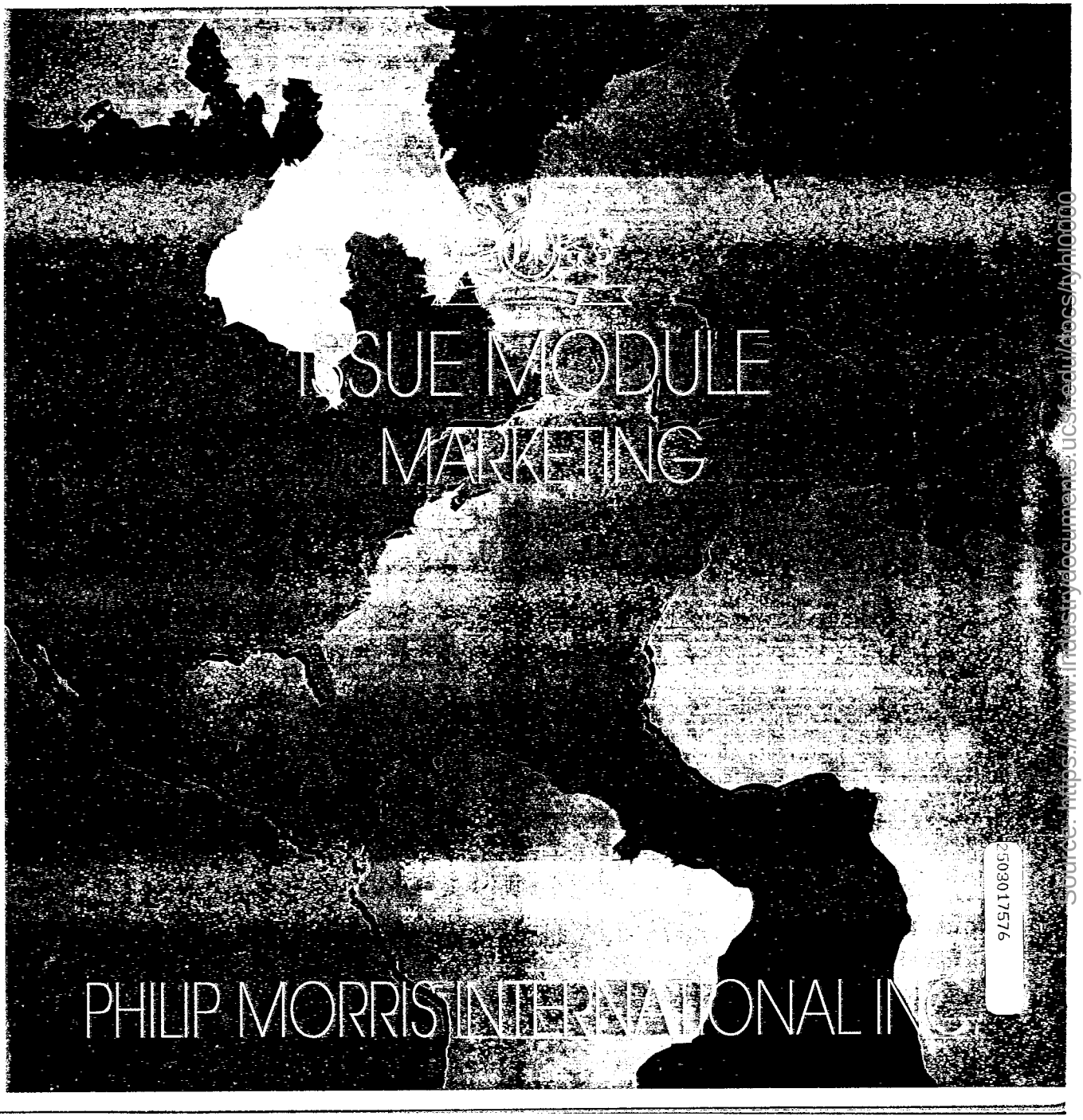

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Philip Morris International Inc.
Control #04

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SELECTED SOURCE MATERIAL
WHY DO YOUNG PEOPLE BEGIN SMOKING?

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WHY DO YOUNG PEOPLE BEGIN SMOKING?

Selected Source Materials

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Note 3 -- Hamilton, "The Effects of Cigarette Advertising Bans on Cigarette Consumption," *Proceedings on the 3rd World Conference on Smoking and Health*, vol. II, p. 829 (New York, 1975)

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Note 39 -- Göttestam, K.O. and Göttestam, K.G., "Changes in Smoking Legislation, Attitudes, and Behavior," *Psychological Reports* (1992), 70: 531-7

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Note 41 -- Statement of Professor Scott Ward, Advertising of Tobacco Products: Hearings before the Subcomm. on Health and the Environment of the House Comm. on Energy and Commerce, 99th Cong., 2d Sess. 668 (1986)

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THE EFFECT OF CIGARETTE ADVERTISING BANS ON CIGARETTE CONSUMPTION

James L. Hamilton

This study developed statistical evidence on how cigarette advertising bans have affected per capita cigarette consumption in several countries. The study had four parts: First, previous studies have indicated that cigarette advertising has had little effect on cigarette consumption in the United States. Second, for several other countries advertising bans have not significantly reversed the upward trend in per capita cigarette consumption. Third, for several countries per capita cigarette consumption trends were examined using multivariate statistical methods to discover whether broadcast advertising bans had, at least, slowed the growth of per capita consumption. For seven countries that have enacted bans, the evidence revealed that bans have not, in general, slowed consumption growth. Fourth, applying this method to groups of countries rather than to each country individual countries that had banned broadcast cigarette advertising were compared with countries that had not and countries that never had permitted it. The growth of per capita cigarette consumption apparently was not slower in countries that had banned or never had permitted cigarette advertising. A ban of cigarette advertising has not been an effective policy for reducing cigarette smoking. The statistical evidence did reveal that popular awareness of smoking health hazards significantly dampened consumption growth. Rather than committing resources to advocating an advertising ban, advocating an allocation of public funds for smoking education programs would be a more productive use of the resources.

I. INTRODUCTION

I am reporting on a statistical study of cigarette consumption and cigarette advertising (1). My purpose has been to estimate how a total ban on cigarette advertising would affect cigarette consumption. As concern has grown over the hazards of cigarette smoking to public health, a feeling has also grown that advertising a potentially hazardous product should not be permitted. Indeed, some persons have felt that one way to curb smoking was to curb cigarette advertising, which they believed stimulated cigarette consumption. In many countries, governments have acted to ban cigarette advertising in one form or another. My inquiry, then, has focused on the effectiveness of such advertising bans as a means for reducing cigarette consumption. Is an advertising ban an effective tool of public policy for reducing cigarette smoking in order to reduce the smoking-related health hazards? Has advertising actually been an inducement for increasing cigarette consumption? I have examined cigarette consumption in various countries that have imposed a government ban on cigarette advertising. I have

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tried to gauge the effects of those bans in order to offer some generalizations about their usefulness as a means of reducing cigarette consumption.

My investigation was able to draw on a variety of different experiences from different countries. In Italy the government banned all forms of cigarette advertising in 1962. Australia will have phased out all cigarette advertising by the end of 1975. The most common public actions, however, have had less scope. Usually, governments have banned cigarette advertising only on radio or television. In some countries, such as Switzerland, Sweden, and Norway, advertising has never been permitted in the broadcast media.

It would be interesting to predict how cigarette consumption would be affected by a complete ban on all forms of cigarette advertising. Unfortunately, Italy is the only country that has had such a total ban. Generalizations about the effects of a total ban could not be based on the experience of a single country. Consequently, my study could predict only the effects of broadcast advertising bans. Even so, it appears that the broadcast media are by far the most effective means of advertising products such as cigarettes. Accordingly, the effect of a ban on broadcast advertising would probably exceed the effect of a ban on other forms of advertising. The only way to predict the effect of a total ban would be, first, to gauge the effect of broadcast advertising bans and then to extrapolate from those effects to predict the effect of a total ban.

As I proceed, I shall first review some previous studies of cigarette advertising relating to the experience in the United States. Then I shall report on my study of the various advertising bans in other countries. Finally, I shall offer what generalizations I believe can be drawn about the usefulness of advertising bans as a means of promoting public health.

II. CIGARETTE ADVERTISING IN THE UNITED STATES

Several studies have been made of cigarette advertising in the United States. These have revealed little consumer sensitivity to advertising. Some researchers could find no solid evidence that advertising had influenced per capita cigarette consumption at all. Other researchers did find a positive effect, but it always was very small. In a statistical study of U.S. cigarette consumption, I found that two other factors had a much greater influence on cigarette consumption than did advertising (2). First, the large increase in personal income appeared as the single most important influence. The second major influence was the growing public awareness of the connection between smoking and disease. While rising incomes tended to increase consumption, the awareness of health hazards tended to decrease consumption. By comparison, advertising appeared as a rather minor influence.

If advertising has had so little influence on cigarette consumption, why have the profit-seeking cigarette companies spent so much money advertising their cigarettes? Economists generally have concluded that cigarette advertising in the U.S. has been a competitive weapon that companies have used to divide the national cigarette market among themselves; it has not been used as a means for

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expanding that market. Certainly, each company advertised in the hope of expanding the market for its own brands, and hence its own profits. Since all the companies advertised, however, their competitive advertising has been offsetting. No particular company was able to get any large competitive advantage from its advertising. Once all the companies were advertising, each had to advertise to protect its sales and profits. Total cigarette consumption was augmented very little by this advertising. The competitive advertising of rival brands to capture the consumer's dollar has not increased the total number of dollars consumers have spent for cigarettes.

These studies have but one implication. Since cigarette consumption has not been increased much by advertising, then consumption would not be reduced much if advertising were banned.

With this presumption in mind, let me now turn to my study of advertising bans in various countries.

III. ADVERTISING BANS AND CIGARETTE CONSUMPTION

For the purpose of this study, I have measured cigarette consumption for each country as the annual per capita cigarette consumption by adults. For each country, this was the total number of cigarettes consumed in a year divided by the total population aged 15 years or older. Presumably, the greater per capita cigarette consumption was, the greater would be the incidence of smoking-related diseases, and the lower would be the public health of the country. Conversely, the lower per capita consumption was, the better public health would be. Consequently, one could consider the public health to have been improved only if per capita adult cigarette consumption actually was reduced.

The first question to be considered, then, is this: Have the governmental bans on broadcast advertising of cigarettes reduced per capita cigarette consumption? To answer that question, I examined the time series of per capita consumption for a group of 11 developed countries. The 7 European countries were the United Kingdom, France, West Germany, Switzerland, Italy, Sweden, and Finland. In addition, I examined Canada, Japan, New Zealand, and Australia.

It was clear that broadcast advertising bans have not reduced consumption (Figure 1). In these countries, the long-term trend in per capita consumption has been upward. In some of these countries the government ban on advertising did initially reduce consumption, but the reductions were strictly temporary. Within one or two years following the ban, per capita consumption again rose, and the long-term upward trend resumed. In other countries, however, the advertising bans did not reduce consumption even temporarily; the long-term upward trend was not even interrupted by the bans. Furthermore, several countries never have had any broadcast advertising of cigarettes. Even so, the long-term trend in those countries also has been upward. No particular differences were noticeable between the trend in countries that had cigarette advertising and the trend in countries that did not.

All of these observations are consistent with the implication of the earlier studies, namely, that cigarette advertising is not a particularly important influence

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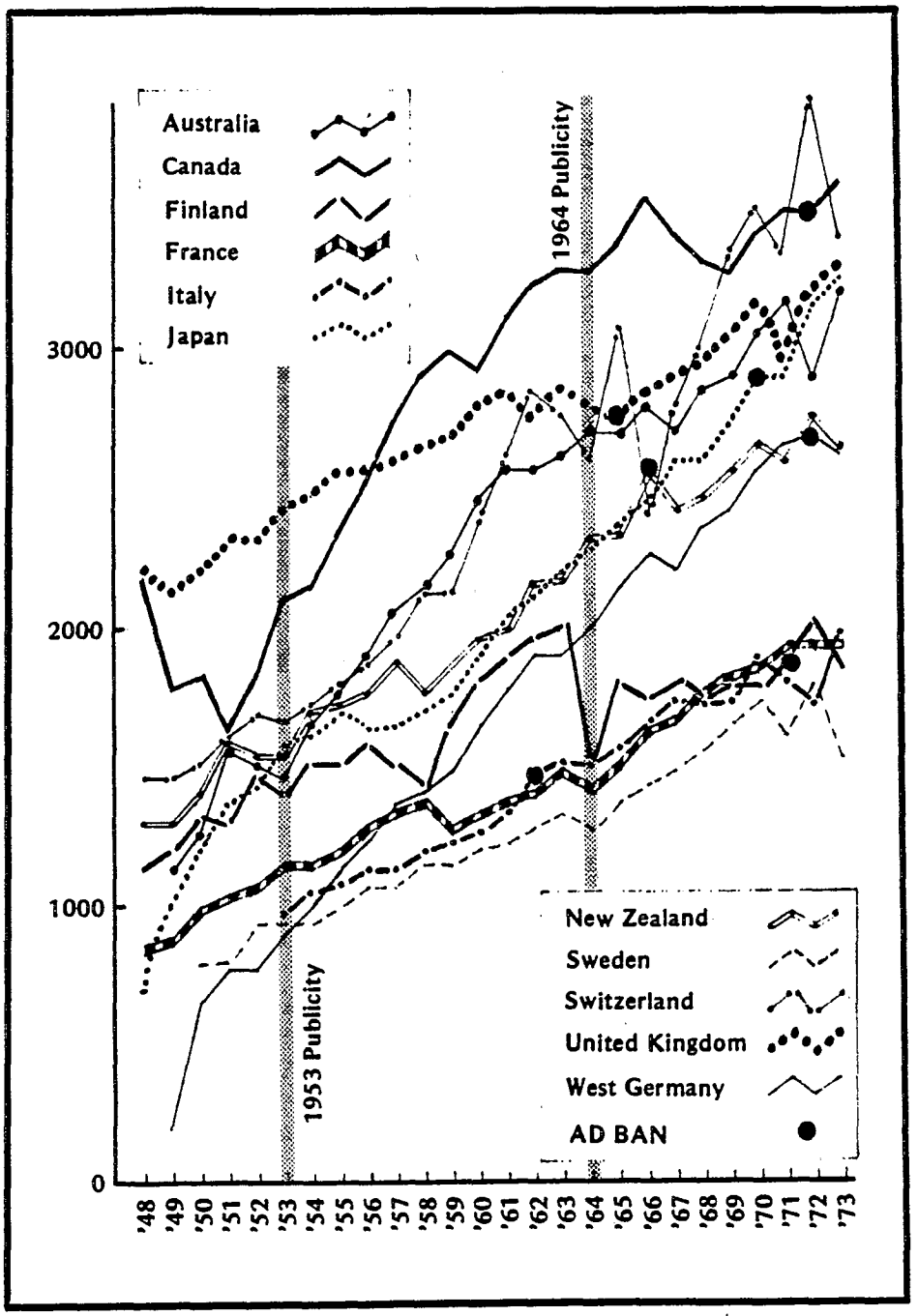

Fig. 1

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on per capita cigarette consumption, and that, accordingly, advertising bans would not cause any permanent reductions in consumption. In fact, in the countries I examined, per capita consumption did not decline even a little as a result of the cigarette advertising bans.

The conclusion, then, is that advertising bans have not been responsible for any improvement in the public health. If the public health goal is to reduce per capita consumption, then advertising bans offer little or no hope as a policy to achieve that end.

There is, however, a second question to be considered. Even though advertising bans have not actually reduced per capita consumption, one might ask whether cigarette advertising bans have at least slowed down the long-term upward trend. Would per capita cigarette consumption have increased even more in the absence of the advertising bans? Perhaps the bans have kept the public health from being worse than it might have been. In that more limited sense, cigarette advertising bans might have made a kind of contribution to the health of the public.

To make such an investigation required some assessment of what per capita consumption would have been without the advertising bans. We are interested in knowing what the difference was between actual consumption and what it would have been otherwise. Such an analysis has two aspects. First, one must consider all the other things that cause per capita consumption to be larger or smaller. In general, economists have expected per capita consumption to be greater as a result of growth in personal income, cigarette price reductions, and advertising. Likewise, they have expected consumption to be smaller as a result of declining income, price increases, and growing awareness and concern about the health consequences of smoking. When all of these influences on consumption are considered simultaneously, one recognizes that an advertising ban might have had a negative effect on consumption, but that this effect was outweighed by the other influences pushing consumption upward. My analysis has attempted to sort out the various influences on consumption and to isolate the effects of advertising and bans on advertising. Second, the only way to accomplish this sorting is through statistical techniques. I used multiple regression analysis (econometrics). This technique simultaneously could consider the influences of income, price, and health awareness, as well as advertising. These factors together would determine the actual changes in per capita cigarette consumption. This statistical technique could sort out the relative importance of each factor. In the process, this sorting would isolate the effect of the advertising bans.

This statistical technique was used in two different ways to estimate what per capita cigarette consumption would have been and what effect the advertising bans have had.

IV. ANALYSIS OF INDIVIDUAL COUNTRIES

The first approach was to examine each country individually. Of the eleven countries in my group, in seven the governments had taken some action to restrict cigarette advertising. Usually, this was a ban on advertising in the broadcast

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media. For each of these seven, the statistical techniques were used to sort out the relative importance of income, price, awareness of health hazards, and the advertising ban.

A major difficulty in my research was that I did not have data on the actual amount of advertising in these countries. In my study of the United States, I was able to obtain such data and to examine directly the relative importance of advertising, but for these other countries, I was not. Consequently, the influence of the advertising itself was not sorted out and isolated. The best I could do was to sort out the relative importance of the advertising bans.[1]

I discovered very little evidence that the advertising bans have, in general, slowed down the long-term upward trend in per capita consumption (Tables I & II). In the United Kingdom, Italy, and New Zealand, advertising was banned prior to 1965. Yet, in those countries, after taking into account all of the changes in income, price, and awareness of health hazards, statistical analysis did not show consumption to have grown more slowly as a consequence of the bans. In Canada, West Germany, and Japan, advertising was not banned until 1970 or later. In those countries, advertising bans were associated with a somewhat slower rate of growth in consumption. The same slowdown was observed in Italy and the United Kingdom, however, immediately after the bans in those countries. Per capita consumption there continued to grow; over a longer period of time the growth does not seem to have been slower as a consequence of the advertising bans. In New Zealand the ban had neither temporary nor long-term effects. The experiences in Italy, New Zealand, and the United Kingdom indicate a strong possibility that the slowdowns will not persist in Canada, Japan, or West Germany. Ten years after the bans in the latter countries, consumption growth may not have been slower than otherwise as a consequence of the bans.

Furthermore, in the statistical analysis, the estimated effects of the advertising bans emerged as statistically valid in only 30-40% of the cases. Moreover, in about half of those cases, the effect of the advertising ban seemed to be to increase consumption, rather than decrease it. That, of course, contradicted common sense.

What the statistical techniques have revealed, in general, is that the advertising bans have had a very weak impact on the growth in cigarette consumption. This is the reason the statistical techniques often failed to isolate the advertising bans as statistically valid, and have often produced illogical results. While per capita cigarette consumption may have increased at a somewhat slower rate immediately following the advertising bans, across a longer timespan consumption growth was not perceptibly slower. The conclusion seems to be that the advertising bans have not slowed down the upward trend in per capita consumption. If there was a long-term slowdown, it was so small as to be imperceptible.

[1] Without data on the advertising variable, the statistical model of cigarette demand was misspecified. Two approaches were used in estimating this misspecified model. First, advertising was dropped as a variable in the model, and the model then was estimated directly, including corrections for autocorrelation. Second, advertising was retained in the model until the reduced form of the model was obtained; then the advertising variable was dropped. The second approach was possible because in the model advertising was specified as a variable with a distributed lag. By retaining the advertising variables, the reduced form retained all of the lag variables and lost only the current advertising variable. The estimating equation was nonlinear in the parameters of the model. See Appendix A.

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TABLE I

Estimates of Misspecified Structural Model of Per Capita Cigarette Demand for 11 Countries

Countries	*Constant*	*Autocorrelation Factor*	*Per Capita Gross Domestic Product*	*Relative Cigarette Price*	*Health Scare Dummy Before 1953*	*Health Scare Dummy 1964-1973*	*Advertising Ban Dummy*	R^2	D.W.
Australia	.9624	.8584	.9622	-	.1351	−.0055	-	.97	2.701***
	(1.25)	(8.20)	(2.43)		(1.04)	(−0.04)			
Canada	4.398	.9464	.2667	−.0137	.0357	−.0828	−.0075	.98	1.745**
	(3.30)	(14.36)	(0.82)	(−1.44)	(0.19)	(−0.73)	(−0.64)		
Finland	1.737	.8869	.1394	−.0022	-	−.4500	−.0098	.79	1.818*
	(2.37)	(8.59)	(1.57)	(−0.84)		(−4.06)	(−0.10)		
France	.6501	.6684	12.43	−.0026	−.0649	−.0733	-	.99	1.597**
(1949-70)	(5.82)	(4.12)	(14.11)	(−3.12)	(−2.42)	(−2.73)			
Italy	.2397	−.4754	1.645	.0011	-	−.0227	.0675	.99	2.329**
	(0.82)	(−2.36)	(9.07)	(0.71)		(−0.89)	(2.83)		
Japan	2.465	.0401	.2055	−.0070	-	−.0319	−.0295	.99	1.933
	(8.86)	(0.18)	(6.88)	(−4.54)		(−0.64)	(−0.53)		
New Zealand	−.0911	−.0113	2.628	−.0042	.0027	−.1036	.1582	.98	1.904
	(−0.33)	(−0.56)	(10.10)	(−2.41)	(0.05)	(−1.26)	(2.06)		
Sweden	−.4648	−.5353	9.370	.0038	-	−.0972	-	.98	1.843
	(−3.08)	(−2.76)	(16.86)	(2.27)		(−3.41)			
Switzerland	3.066	−.0068	.4889	−.0415	.1219	−.2682	-	.97	1.908
(1950-69)	(3.15)	(−0.03)	(11.68)	(−4.30)	(1.18)	(−2.78)			
United	3.538	.8210	−.1163	−.00642	-	−.00802	.1354	.88	2.689***
Kingdom	(6.55)	(6.59)	(−1.13)	(−1.06)		(−0.09)	(1.58)		
West Germany	1.586	.4887	27.13	−.0148	.0113	.0180	−.0587	.99+	1.395***
	(4.42)	(2.69)	(15.69)	(−5.43)	(0.26)	(0.47)	(−1.49)		

Notes: See Table III.

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TABLE II

Estimates of Misspecified Estimating Equation for Model of Per Capita Cigarette Demand for 11 Countries

Country	*Constant*	*Lagged Consumption*	*Per Capita Gross Domestic Product*	*Relative Cigarette Price*	*Health Scare Dummy Before 1953*	*Health Scare Dummy 1964-1973*	*Advertising Ban Dummy*	R^2	*D.W.*
Australia	.0259 (0.03)	.7666 (6.50)	1.489 (2.74)	-	−.0884 (−0.96)	−.0700 (−0.75)	-	.97	2.763
Canada	2.691 (2.20)	.8538 (9.39)	.5905 (1.51)	−.00725 (−1.08)	−.2112 (−2.34)	−.0640 (−0.87)	−.0693 (−0.74)	.98	2.387
Finland	.6716 (1.91)	.2368 (1.04)	.2706 (3.48)	−.00027 (−0.09)	-	−.2836 (−2.09)	−.2089 (−1.51)	.70	1.726
France (1949-70)	.7232 (4.61)	.3872 (1.93)	11.86 (10.22)	−.0029 (−2.42)	−.0671 (−2.18)	−.0396 (−1.23)	-	.99	1.488
Italy	.1623 (0.57)	−.5894 (−2.08)	1.6720 (9.74)	.0016 (1.04)	-	−.0162 (−0.50)	.1000 (2.76)	.99	2.379
Japan	2.463 (8.29)	.0362 (0.13)	.2058 (6.49)	−.0070 (−4.25)	-	−.0313 (−0.60)	−.0290 (−0.51)	.99	1.923
New Zealand	4.167 (1.30)	.9595 (9.97)	−.0521 (−0.07)	−.0100 (−4.46)	−.0567 (−1.20)	.0344 (0.40)	.0050 (0.06)	.98	3.155
Sweden	−.3901 (−2.89)	−.5717 (−2.31)	9.455 (17.46)	.0030 (1.85)	-	−.1472 (−3.55)	-	.98	1.959
Switzerland (1950-69)	2.629 (3.08)	−.3085 (−1.24)	.4876 (15.19)	−.0367 (−4.24)	.1383 (1.36)	−.3481 (−3.06)	-	.97	1.614
United Kingdom	2.906 (4.46)	.7598 (5.59)	−.1319 (−1.23)	−.0006 (−0.08)	-	−.0422 (−0.54)	.1380 (1.68)	.90	2.837
West Germany	−1.183 (−0.12)	1.0156 (18.40)	15.37 (3.41)	−.0081 (−4.09)	−.0578 (−2.28)	−.0084 (−0.33)	−.0702 (−2.71)	.99+	2.200

Notes: See Table III.

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[illegible]est [illegible]ermany	−1.183 (−0.12)	1.0156 (18.40)	15.37 (3.41)	−[illegible]1 (−4[illegible]	−.0578 (−2.28)	−.0084 (−0.33)	−.0702 (−2.71)	.99+	2.200

Notes: See Table III.

TABLE III

Estimates of Misspecified Structural Model of Per Capita Cigarette Demand, Pooled Samples

Country	*Constant*	*Autocorrelation Factor*	*Per Capita Gross Domestic Product*	*Relative Cigarette Price*	*Health Scare Dummy Before 1953*	*Health Scare Dummy 1964-1973*	*Advertising Ban Dummy*	R^2	*D.W.*
Australia & New Zealand	.6481 (1.10)	.8964 (12.79)	.6304 (2.45)	-	-	−.0414 (−0.70)	.0336 (0.44)	.95	2.434**
Finland & Sweden	1.058 (0.92)	.9706 (25.19)	.4603 (1.87)	−.0031 (−1.44)	-	−.2219 (−4.01)	−.0154 (−0.22)	.91	2.474**
France, Italy, Switzerland & West Germany	4.646 (2.04)	.9866 (49.07)	.4492 (1.23)	−.0123 (−3.81)	-	−.1101 (−1.76)	−.0293 (−0.24)	.96	2.651††
France, Sweden, United Kingdom & West Germany	3.292 (4.00)	.9867 (50.10)	.3677 (2.77)	−.0045 (−3.70)	- -	−.0631 (−2.62)	.0917 (2.01)	.99+	1.560***
Canada, France, Italy, Finland, New Zealand, Sweden, Switzerland, United Kingdom & West Germany	−10.88 (−3.05)	1.003	.2373 (1.42)	−.0086 (−6.06)	-	−.1126 (−3.47)	−.0149 (−0.38)	.99	2.484††

Notes:

††† D.W. statistical test was significant at 2% level of significance.
†† D.W. statistical test was significant at 5% level of significance.
† D.W. statistical test was significant at 10% level of significance.
* D.W. statistical test was indeterminant at 10% level of significance and not significant at 5% level.
** D.W. statistical test was indeterminant at 5% level of significance and not significant at 2% level.
*** D.W. statistical test was indeterminant at 2% level of significance.

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V. COMPARISONS OF COUNTRIES WITH AND WITHOUT ADVERTISING BANS

The second approach was to compare countries. Countries that had banned broadcast advertising were compared to countries that had not. They also were compared to countries that had never permitted broadcast advertising. The goal was to see whether the trends in per capita consumption were different among those countries. Has consumption grown more slowly in those countries with advertising bans in the broadcast media than in those that have not banned it? Has consumption grown more slowly in those countries that have never permitted broadcast advertising? The same statistical methods were used, only they were applied to the data for groups of countries, rather than to the data for each country individually.

What I discovered by using this group approach was not substantially different from what I discovered by analyzing the countries individually (Table III). Income and the awareness of health hazards emerged as the most important influences on per capita cigarette consumption. The effect of the advertising bans seemed even weaker than in the preceding approach. In almost no case were the estimated effects of the advertising bans shown to be statistically valid. Again, advertising bans did cause cigarette consumption to be lower than it otherwise would have been, the effect certainly was very small.

VI. CONCLUSION

In conclusion, is an advertising ban an effective policy for reducing smoking in order to improve the public health? Have advertising bans in the broadcast media been sufficiently effective that countries could further improve the public health by banning all cigarette advertising in all media? For those concerned with the adverse public health consequences of smoking, the goal must be to reduce per capita cigarette consumption. In my study, I have examined the data for several countries that have banned broadcast advertising of cigarettes. This evidence revealed that such advertising bans in the broadcast media have had virtually no effect on per capita consumption. Certainly these bans have not actually reduced consumption. There is very little evidence that the bans have even slowed down the long-term upward trend in consumption. Consequently, extending such bans to all other media would surely have equivalently small effects on consumption. I must conclude that a policy for eliminating all cigarette advertising offers almost no hope of reducing smoking and improving public health.

From my statistical analysis of consumption, the single most important influence generally was income. Certainly it would not seem plausible to curtail personal income in order to reduce smoking. While cigarette prices did not seem to be a substantial influence, prices have declined relative to the prices of other goods. Since high prices generally discourage consumption, increasing tobacco taxes would keep the prices relatively high.

The most important factor discouraging cigarette consumption has not been the ban on cigarette advertising. Rather, it has been the growing public awareness

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of the potential health hazards of cigarette smoking. The major episodes in this evolving awareness occurred in the early 1960s with the publicity given to the major scientific reports connecting disease with smoking. In my statistical studies, these episodes seem to have reduced cigarette consumption considerably below what it would have been in the absence of that publicity.

The most effective policy for reducing per capita cigarette consumption seems to be to continue to increase public awareness of smoking hazards. No other influence on cigarette consumption offers any hope as a means for exerting strong downward pressure on consumption. Income growth cannot be halted. Price seems to have little effect. Advertising does not seem to be an important influence. Only the public awareness of health hazards remains. And the only apparent means of further raising public awareness is through educational campaigns. That conclusion sounds trite. Nonetheless, it seems to be the only means of exerting strong pressure on cigarette consumption. In my statistical studies, it was the only important factor depressing consumption.

If agencies concerned with public health intend to spend money, time and emotional resources to enact government policies to reduce per capita cigarette consumption, then advocating an advertising ban would not seem to be the most effective use of those resources. Rather, that energy and that money could be used to advocate the allocation of government funds to support public educational programs that would increase the public awareness of the health hazards. My perception is that such educational programs generally have received meager funding. Certainly their impact must be proportional to the funds they have. On the basis of my studies, I could not recommend that any public health agency spend its time advocating a government ban on cigarette advertising.

The arguments for banning cigarette advertising seem based largely on assumptions and anecdotes about advertising, and on undocumented assertions about the effects of advertising on the consumption of other products. Certainly these form an uncertain basis for proposing or enacting public policy. The evidence that cigarette smoking is related to the incidence of disease is fundamentally statistical evidence. Similarly, the evidence that cigarette advertising increases smoking, and that a ban would decrease it, must be statistical. My study did not find such statistical evidence; perhaps my study is inaccurate. But, without such evidence, a public health agency that decided to advocate a ban would risk wasting its resources on an ineffective policy.

APPENDIX

Figure 1 is time series of per capita adult cigarette consumption in eleven countries for 1948-73.

Tables I-III report a representative selection of the statistical results of the study. Each pair of lines in a table contains the estimated coefficients of the multiple regression equation and the t-scores (in parentheses) for each coefficient. The coefficients reported in Tables I and III have been estimated with a correction for autocorrelation. The D.W. column reports the Durbin-Watson statistics. The coefficients in Table II have been estimated with a nonlinear estimation procedure based on a Taylor's series expansion.

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The misspecified structural equation for the model of cigarette demand was

$$X_1(t) = b_1 + b_2X_2(t) + b_3X_3(t) + b_4D_1(t) + b_5D_2(t) + b_6D_3(t),$$

representing for year t the per capita cigarette consumption (X_1), per capita gross domestic product (X_2), relative cigarette price (X_3), and three dummy variables. Since the developing awareness of the health hazards of smoking could not be quantified, I introduced dummy variables for two episodes in the evolution of smoking attitudes: the period prior to the early smoking and health studies that appeared around 1953 (D_1) and the period following 1964 (D_2). The period of the advertising ban was represented as D_3, also a nonquantifiable dummy variable.

The misspecified estimating equation was calculated from the correctly specified structural equation. It was

$$X_1(t) = b_1 + \lambda X_2(t-1) + b_2 X_2(t) - \lambda b_2 X_2(t-1) + b_3 X_3(t) - \lambda b_3 X_3(t-1) + b_4 D_1(t) + b_5 D_2(t) + b_6 D_3(t),$$

where the only difference is the inclusion of observations, $X_1(t-1)$, $X_2(t-1)$, and $X_3(t-1)$.

ACKNOWLEDGEMENT

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PLANNING, DEVELOPMENT AND EVALUATION OF A SPECIAL SMOKING AND HEALTH PROGRAMME FOR PUPILS AGED 12-13 YEARS

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Attitudes towards and ideas concerning health-habits and the mode of living exist in what may be called the culture of the society. As far as smoking is concerned, it can be said that a culture with a negative attitude towards smoking produces few smokers who make a late debut, and a culture with a positive attitude towards the habit produces a large number of smokers who start smoking early. We now recognize the important fact that the habit shows a social-psychological pattern of existence, with its foundation in the growing-up environment. Therefore anti-smoking programmes must be directed at the whole environment at once; that is to say, the home, the immediate environment and the society in general. The measures employed must be varied and should include education, restrictions, and help to quit. The different measures must be coordinated, and balanced.

THE BACKGROUND OF A SPECIAL SMOKING AND HEALTH PROGRAMME FOR SCHOOLS

In 1975 the National Council on Smoking and Health began an extensive follow-up study in order to clarify the extent of smoking in the Norwegian basic school (1,2).

The trend in smoking habits rose from about 2% daily smokers for both sexes at age 12, to 22% for boys and 28% for girls at age 15. The average consumption was 7.1 cigarettes a day for boys, and 6.5 a day for girls. A similar study in 1980 showed that the proportion of daily smokers among girls had dropped to 21%.

THE TIME TO START ANTI-SMOKING EFFORTS

An important question to be solved before starting the work on an anti-smoking campaign is at what age smoking can be opposed most effectively. To prevent children from taking up the smoking habit, anti-smoking efforts must reach them before the habit is established.

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TABLE 1. SMOKING HABITS BY AGE AND SEX, 1975

Age	Per cent daily smokers		Per cent occasional smokers		Per cent nonsmokers who have tried to smoke	
	Boys	Girls	Boys	Girls	Boys	Girls
12	2.3	1.5	25.6	22.0	44.3	36.6
13	6.6	7.0	28.7	28.9	44.7	38.6
14	16.4	16.5	29.2	34.2	39.8	32.3
15	22.5	28.3	24.0	30.3	40.0	29.2

Results from the project described above suggest that, in Norway, the critical age is 12-13 years. A strong increase in the percentage of daily smokers is observed among both boys and girls across the age-group 12-15 years.

FACTORS WHICH INFLUENCE THE CHILDREN'S SMOKING

Studies from several countries confirm that the probability of becoming a smoker increases markedly when father smokes, mother smokes, older siblings smoke, best friend smokes, and when the child is permitted by the parents to smoke (as opposed to parental restrictiveness towards children's smoking). The Norwegian 1975 study showed that when both parents smoke, and they permit the children to smoke, 67% of the boys and 78% of the girls aged 15 are daily smokers. When neither of the parents smoke, and the children are not permitted to smoke, the figures drop to 9% among boys and 11% among girls. The results from the 1980 study were almost identical (2).

THE STRUCTURE OF THE PACKAGE FOR ANTI-SMOKING PROGRAMMES IN SCHOOLS

The objectives for the programme and the pedagogic principles on which this programme was based, put great emphasis on the immediate effects of smoking on the organism, and on the modern debate on pollution and waste of resources. One important part of the programme was intervention in the social network of the pupils through their parents, another was active involvement of the pupils in tobacco and health education by asking them to write an essay on smoking and health.

The first edition of the "package" contained a folder for the pupils, describing the immediate effects of smoking on the organism, smoking as a form of self-pollution and tobacco growing as a waste of agricultural resources. Another folder was directed at the parents, telling them that an anti-smoking campaign at school would probably have no effect without their active participation and support. The "package" also included a teacher's guide emphasizing experiments showing that the pupils' active participation in a programme increases the probability for attitude changes.

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FIELD EXPERIMENTS AND EVALUATION

Two field experiments were carried out to test the effects of the material and the total school campaign. The first of the experiments was designed especially to test the short-term effect of the campaign on the smoking behaviour of the pupils. Twenty-two schools in a rural district were divided into four groups.

In the first group of schools the pupils were only given the folder prepared for use in the classroom. In the second group of schools, the pupils were given the folder and asked to write an essay on smoking and health. In the third group, the pupils read the folder but did not write an essay. Instead the parents were involved. In the fourth group, the pupils were the object of a complete integrated programme (folder, essay, parents).

In group no.4 the reduction in total cigarette consumption (21%) immediately after the campaign was more than three times that achieved in group no.1 (6%). In the two other groups the reduction in use of cigarettes lay somewhere in between that achieved in groups 1 and 4 (3).

OUR CONCLUSIONS ARE AS FOLLOWS:

(i) It is possible to achieve a reduction - at least on a short-term basis - in the use of cigarettes among school children.

(ii) The design of the campaign is of vital importance, and even "small" improvements may lead to increased effect on the children's smoking habits.

After the evaluation of the first field experiment, which also included interviews with parents and teachers, the material was changed and "improved" considerably.

The long-term effect of the revised material and campaign has been tested out in a second field experiment conducted in an urban-rural area. It was concluded that the campaign had a certain long term effect on children who smoked occasionally. In the first half year after the campaign, smoking rates in fact decreased, though an increase would have been expected at this level. In the next six months the total percentage of smokers increased at a lower rate than expected (3).

FINAL CONCLUSIONS

In Norway, a hopeful trend has appeared in recent years in the development of smoking habits of children and youth. The nation-wide studies in 1975 and 1980 confirmed a substantial reduction in the percentage of both daily and occasional smokers. Girls have reduced smoking even more than boys after a long period of increase.

Some possible explanations of this new trend are an increase in general health information in Norway, and a more active involvement by schools, teachers and parents in anti-smoking education. It should also be noted as

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an important factor that a Tobacco Act (including a ban on advertising) entered into force in 1975 and took away the opportunity to glamourize smoking (4).

A partial explanation may be that the more negative attitude towards smoking which has developed in recent years looks more positively upon anti-smoking measures. It is also possible that the education campaigns and programmes have improved in content. In our opinion the key to further improvement lies in learning from empirical evaluation studies, and from theories on how to influence attitudes and behaviour, based on principles of social psychology.

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COMMENTARIES

Why children start smoking

The Social Survey Division of the Office of Population Censuses and Surveys carries out a wide range of surveys for British government departments. In December 1990 HMSO published a report on 'Why Children Start Smoking' by Eileen Goddard. We publish here a brief summary of what the publication shows, and three commentaries on it.

Why children start smoking

From Eileen Goddard (OPCS, London)

Introduction

The Social Survey Division of the Office of Population Censuses and Surveys carries out a wide range of nationally representative continuous and *ad hoc* social surveys for government departments. In the smoking field, the General Household Survey has, in alternate years since 1972, provided key data for monitoring changes in the prevalence of cigarette smoking among the adult population, and biennial surveys of smoking among secondary school children have been carried out since 1982 to provide similar information for 11–15-year-olds.

The survey reported here was carried out for the Department of Health. A sample of secondary school children was interviewed three times—in 1986, 1987 and 1988, when they were at the beginning of the second, third and fourth years, respectively. The aim of the survey was to see which of a range of factors were most closely associated with children starting to smoke.

The full report *Why children start smoking*, by Eileen Goddard, was published by HMSO in 1990 (ISBN 0 11 691327 4), and is available from HMSO bookshops and through good booksellers, price £12.85.

Summary of main findings

The survey results show that the onset of smoking in children aged 12–14 is seldom a single distinct event and that children's smoking behaviour is much more erratic than adult smoking. There is not, in general, a steady progression from smoking occasionally to smoking regularly and then to increasing consumption. The behaviour of some children undoubtedly does fall into this pattern, but that of the majority does not.

It seems equally likely that children's attitudes towards smoking are intrinsically different from those of adults—comparatively more intuitive, less rational, less stable and probably even less closely related to behaviour.

The report identifies a number of risk factors associated with starting to smoke—pre-existing characteristics which were more likely to be found among those who subsequently started to smoke than among those who did not. The most important of these can be summarized as follows:

(1) being a girl;
(2) having brothers or sisters who smoke;
(3) having parents who smoke;
(4) living with a lone parent;
(5) having relatively less negative views about smoking;
(6) not intending to stay on in full-time education after 16;
(7) thinking that they might be a smoker in the future;

Analysis is presented which shows that apart from parental smoking, which only has an effect if siblings do not smoke, all these characteristics were associated independently with starting to smoke, and that their independent effects were all fairly small and of similar magnitude. This can be interpreted as confirming that there is no simple

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explanation of why children start to smoke—many factors are involved. The fact that sex has an independent effect as strong as that of most of the other characteristics shows that the greater propensity of girls in this age group to start smoking than boys cannot be attributed to differences in any of the other factors identified from the survey data.

Other points of interest

Attitudes to smoking

Although there is an association between smoking experience and attitudes, even among smokers the majority appear to have very negative views about the possible consequences of smoking. Insofar as pupils did have less negative views, these were manifested as thinking that smoking would help them to avoid undesirable things, rather than that it would make nice things more likely to happen.

Most children say that they do not want to be smokers in the future, although quite a proportion of them are realistic enough to admit that they probably will be. Most children who thought they would be smokers either wanted to be non-smokers or wanted to smoke less than they thought they would.

Pupils' expectations of their likely future smoking were unrealistically optimistic—many more were smokers at Wave 3 than thought 2 years earlier that they would be.

Self-image

An attempt was made to look at differences in personality between those who started to smoke and those who did not, but the general picture seems to be that at this age, there are greater differences between boys and girls than there are between smokers and non-smokers.

The role of the family

Non-smokers with siblings who smoked were much more likely to start smoking during the survey than those with non-smoking siblings. Girls appeared to be somewhat more susceptible to the influence of siblings than were boys.

Parents' smoking behaviour has little effect on children's smoking if there are siblings who smoke, but does have an appreciable influence if there are no siblings who smoke.

In spite of the association with parental smoking for both boys and girls in two parent families, the group most likely to have started to smoke betwe Wave 1 and Wave 3 were those in lone pare families, regardless of whether or not that par was a smoker.

The overwhelming majority of pupils said th their families would stop them smoking or would t to persuade them not to smoke. This was true ev in families where both parents were smoke indicating than many children are being told not smoke by parents who smoke themselves.

Over half of all current smokers at Wave thought that their parents did not know th smoked—and they were much more likely to ke their smoking a secret if their parents did not smo themselves. This inclination to secrecy was mu more evident among girls than among boys.

The role of advertising

The data lend some support to the view that tobac advertising promotes smoking among young peop but the effect appears to be small in comparis with some of the other influences on children, su as the example set by parents and siblings.

Cigarette advertising does not appear to particularly successful in recruiting smokers particular brands—although Silk Cut was the bra whose advertisements were most recognized a liked, it was the usual brand of only one in smokers, whereas five times as many smoi Benson & Hedges.

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Why children start smoking—the health education challenge

From Amanda Amos (Department of Commun Medicine, Usher Institute, Edinburgh)

Introduction

Nearly all young adolescents have very nega attitudes towards smoking, yet by the time they 15 around a fifth of British schoolchildren regular smokers.[1-3] Altogether an estimated million 11–15-year-olds in the UK are regula occasional smokers. Although smoking am

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young people has declined in recent years,[2] it remains a major problem.

The reasons why children start to smoke and the factors which influence whether they go on to become regular smokers have been the focus of numerous research projects over the last 25 years. A multiplicity of factors have been identified as being involved in the process of becoming a smoker. These range from personal and individual factors such as knowledge, attitudes, beliefs and values, through to aspects of both the personal and social environment including friends, school and resources, and the wider social and cultural environment.[4–6] A greater understanding of this process has led to major changes in the content, emphasis and approach of programmes aimed at tackling this problem. One of the most important changes has been a move away from the more traditional didactic educational interventions, which focused almost exclusively on the long-term health consequences of smoking, towards more child-centred approaches which use participatory learning methods to enable attitudes, values and beliefs to be explored, and decision making skills to be enhanced.[5,7,8] A second major change has been the recognition that educational programmes, no matter how well designed, cannot address all the factors which influence this behaviour. It has been argued that a major reduction in children's smoking will only be achieved if health education is located within comprehensive health promotion programmes which also address the wider social and environmental factors such as tobacco promotion and the availability of cigarettes.[5,9] Whilst research has led to the development of more effective health education programmes, many questions remain unanswered. Of particular concern has been the recent change in smoking patterns between boys and girls, with smoking becoming more widespread among teenage girls than boys. This has raised questions about how current educational approaches might be modified in order to increase their effectiveness in reducing the onset of smoking, particularly amongst young women.

The recent OPCS study *Why Children Start Smoking*,[1] attempted to answer some of these questions by following a group of 11-year-old British schoolchildren for 3 years in order to assess the relative importance of selected personal, social and environmental factors as predictors of starting to smoke. The methodological problems encountered in investigating somewhat unstable attitudes and behaviour patterns in young people, and the limitations of quantitative methods, resulted in the study perhaps revealing less about the process than the investigators might have originally hoped. However, some of the findings carry implications for health promotion and health education. Overall, they lend support for the broad approaches currently advocated. This article will consider what light these findings shed on when smoking education should take place, what it should involve, who should be involved, and whether different approaches should be used with girls.

Timing

Smoking education needs to start at an early age as 39% of children have already tried smoking by the beginning of their second year at secondary school (11–12-year-olds). The importance of reaching children before they try their first cigarette appears to be particularly important for girls as, although experimentation rates for boys and girls were the same, girls were much more likely to continue smoking than boys.

Content and approach

Increasing children's knowledge about the health effects of smoking is unlikely, on its own, to be sufficient to stop many of them taking up the habit. For example, nine out of ten second year students felt that they would be more likely to start getting lung cancer and less likely to feel really healthy if they were regular smokers rather than non-smokers when they were 15. Even among smokers the majority appeared to have very negative views about the possible consequences of smoking. This does not imply that developing negative attitudes about smoking should not be part of health education programmes. Indeed, the study found that having relatively less negative views about the future consequences of smoking was a risk factor. It appeared that smoking was seen not as bringing positive benefits, but rather somehow helping avoid the problems of growing up such as upsetting people, feeling miserable and feeling left out of things. Thus, health education programmes should attempt to help young people develop their social or 'life skills' so that they can deal with the problems of adolescence in ways which are more constructive and healthy than that of taking up smoking. This would also seem to be an argument in favour of locating smoking education within a broad school health education programme which addresses a wide

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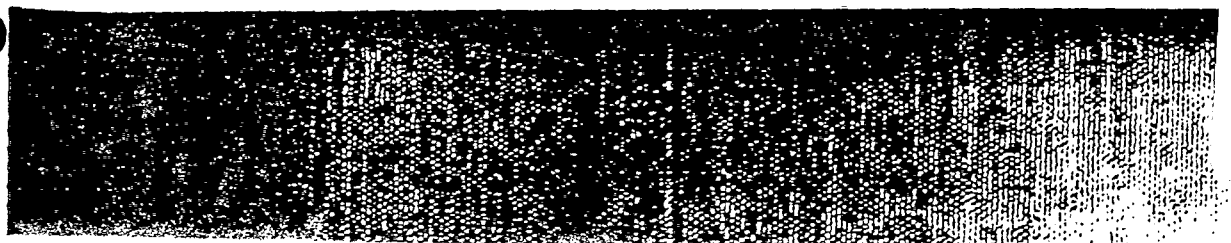

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range of adolescent issues and problems rather than having one-off topic specific sessions.

In designing these programmes attention needs to be given to the picture of the process of becoming a smoker revealed by this study. Both smoking attitudes and behaviour were unstable. Adult notions of being a smoker, ex-smoker or non-smoker do not appear to apply as rigidly to this age group. Most children do not see themselves as being committed smokers or non-smokers. Rather, it appears that smoking is not a well thought out behaviour, but is more opportunistic in nature. Thus, addressing children as smokers or non-smokers may have little meaning for children at this age and the experimental, erratic nature of most smoking experience needs to be borne in mind. Thus, exploring with children the reasons why they might accept and smoke a cigarette in certain situations, and helping them to develop ways of dealing with such situations might be more productive than focusing solely on the more long-term costs and benefits.

Target groups

The importance of starting smoking education at an early age has already been identified. These programmes need to continue throughout the school curriculum and should take into account the different stages of smoking experimentation and the psychosocial needs of different children at different ages. The influence of parents smoking habits on children suggests that extending school health education programmes to involve parents may bring considerable benefits, particularly if the parents themselves can be helped to give up. Indeed, some programmes have already been developed which involve both children and their parents, and have been found to reduce uptake amongst children and increase cessation amongst parents.[10,11]

There seems to be little benefit in trying to target smoking education only to those children who are at most risk of becoming smokers. However, it is important for programme designers and teachers to bear in mind that certain young people, in particular those whose parents or siblings smoke, who come from single parent families, who are low educational achievers and who are generally 'misfits', are more likely to start smoking.

The single most important predictor of smoking was being a girl and it is disappointing that the study was unable to distinguish the reasons for this. Indeed, they concluded that none of the other r factors identified in the study explained the grea propensity of girls to start smoking than bo However, the study did reveal some potentia interesting differences between boys and girls in t age group. Girls showed the same level of exp mentation as boys, but once they had tried cigarette they were more likely to become smok Girls also seemed to be more dependent at lo consumption levels than boys in that they perceiv greater problems in giving up and more cravin deprived of cigarettes. Girls of this age had a poo self-image than boys seeing themselves as being self-confident, mature and socially skilled (thou this was not related to smoking behaviour). T were also more secretive about their smoking more influenced by other people's smoking hab These findings are consistent with the wid expressed view that girls use smoking more as a to deal with feelings and emotions, particularly areas where they feel they lack self-confidence where they want to 'fit in'.[4] It would have b interesting to know whether peer pressure, or hav a best friend or friends who smoked was more o influence on girls than boys. This factor was included in the study as it was felt that friends w a less important influence at the early stages smoking. However, it is well known that girls t to associate with boys who are older than themse and this, therefore, might have a differential eff as has been found in at least one previous stud Different research methodologies probably nee be used, in particular qualitative studies, if we w to gain a deeper understanding of the rela importance of these influences. These, in t should help inform the design of health educa initiatives, and answer questions such as should and boys receive separate smoking education.

Scope of programmes

Finally, the study's findings strongly support need for a comprehensive tobacco control pol Smoking at this age is opportunistic. It seems lik that if obtaining cigarettes was made more diffi through enforcement of the law on sales of tob and increased taxation, this would lead to a re tion in children starting. Initiatives which re adult smoking, including education, cessation port, increased taxation and increased non-smo areas, would result in fewer children growing u homes and environments where smoking was se

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acceptable. Finally, the study supports evidence from previous research showing that cigarette advertising and promotions reinforces smoking amongst young people, and may well increase uptake.[13,14] Clearly, cigarette promotions should be banned.

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Is taking up smoking a reasoned action?

From Stephen R. Sutton (Institute of Psychiatry, Imperial Cancer Research Fund Health Behaviour Unit, London).

Introduction

We have come to expect a high standard of research from the Social Survey Division of OPCS, particularly in the area of smoking, and this report is no exception. It describes a longitudinal study in which a large sample of children were followed from the beginning of their second year in secondary school through to the beginning of their fourth year, with three waves of data collection. The study focuses on the role of attitudes and expectations in the process of uptake of smoking and, like the earlier OPCS study of adult smokers (Marsh & Matheson, 1983), it was guided by a particular theoretical approach, the Theory of Reasoned Action (Ajzen & Fishbein, 1980). This approach has been used in a number of studies of smoking which I have reviewed elsewhere (Sutton, 1989b). The report contains a wealth of information about this and many other aspects of children's smoking and it is not possible to do full justice to it in the limited space available here. In this commentary I will therefore discuss some of the highlights of the report in terms of five questions that are of particular interest to me and, I hope, to others in the smoking field.

Are children's self-reports valid?

A particularly valuable feature of the study is that it incorporated a biochemical measure of smoke exposure (saliva cotinine), as well as measures of attitudes and behaviour. An important reason for including saliva cotinine measures is to check the accuracy of self-reports. It is reassuring, then, to learn that fewer than 1% of children were reclassified as possible smokers by virtue of having suspiciously high levels of cotinine. Thus, in so far as saliva cotinine can be used to validate self-reports, it appears that under the conditions in which they were elicited in this study, children's self-reports of their smoking can be accepted at face value.

Of course, saliva cotinine has its limitations as a validity criterion. In particular, it is not possible to distinguish between the low levels arising from passive smoke exposure from those that might result from occasional smoking. Furthermore, it is not possible to detect over-reporting of smoking which

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might be an expression of 'bravado' on the part of children who wish to portray themselves as experienced in illicit behaviour.

The conditions under which self-reports are obtained are likely to be of crucial importance. In this study the saliva samples were collected while the children were filling in the questionnaire, their purpose having been explained at the beginning of the session. This may have encouraged the children to report their smoking more honestly through the expectation that the researchers would be able to check their claims. It is not possible to tell from this study whether this effect was present or not. An earlier OPCS survey of schoolchildren (Goddard, 1989) incorporated a test of the effect of saliva collection on reported prevalence, but the findings were inconclusive.

Are children 'hooked' after one cigarette?

Analysis of adults' retrospective reports about their smoking experiences leads to the startling conclusion that '... of those who smoke one cigarette, about 70% ... go on to smoke regularly for 5 years or more' (Russell 1990, p. 295). It is possible that this figure is inflated by adult non-smokers tending to forget that they had tried a cigarette in adolescence or perhaps feeling that smoking the odd cigarette many years previously does not really count as having smoked. Longitudinal studies of the uptake of smoking should yield stronger data on this question. Over the 2-year period covered by the OPCS study, approximately 48% of those pupils who had tried smoking once by Wave 1 apparently did not smoke again (calculated from Table 3.4, p. 15). This is an important finding, suggesting that trying a single cigarette is not inevitably followed by rapid escalation to regular smoking. [By comparison, the proportion of Wave 1 never-smokers who remained never-smokers at Wave 3 (i.e. who did not smoke during the intervening 2-year period) was 64%.]

It would be valuable to have more detailed data on changes in smoking habits over a longer time period, ideally extending into early adulthood, so that the full set of transition probabilities could be estimated. Of course, it is difficult to interpret such data in terms of the *effect* of smoking a single cigarette. Trying a cigarette for the first time is a complex learning experience. It is certainly plausible that the first experience of smoking a cigarette produces cognitive changes (e.g. changes in self-image, changes in beliefs about the effects of smoking) that endure long enough to increase the likelihood of trying a second cigarette should the opportunity arise. This process is unlikely to be as simple as trying smoking, finding you like it, and wanting to try it again. On the other hand, it is also conceivable that those factors that increase the chances of trying a first cigarette by some given age also increase the likelihood of smoking (again) within a given subsequent time period. That is, if you are predisposed (because of background, personality, attitudes, circumstance or opportunities) to try a cigarette, you may be similarly predisposed to smoke again. The OPCS data potentially could be used to examine these two possibilities.

What do children believe about smoking and health?

The measures of attitudes and beliefs used in this study were based on the Theory of Reasoned Action. This highly influential theory of attitudes stresses the importance of individuals' beliefs about the *personal* consequences of a particular course of action. At both Wave 1 and Wave 2, the children were asked how likely each of a series of 24 outcomes would be if they were a regular smoker at age 15 and if they didn't smoke at all. They were also asked how much they cared about each outcome. With regard to the health-related outcomes, 92% of children at Wave 1 said that they would be less likely to 'feel really healthy' if they were a regular smoker at age 15 than if they were a non-smoker, 87% said they would be more likely to 'start to get lung cancer', and 79% said they would be more likely to 'get out of breath' (Table 4.1, p. 17). The proportions of pupils who said that they 'cared a lot' about these things were 97, 94 and 83%, respectively (Table 4.3, p. 19). There is not much evidence here for the view that children of this age do not appreciate the health risks of smoking. Among the other outcomes, 'get fat' produced an interesting split: 19% thought they would be *less* likely to get fat if they were a regular smoker at 15 while 39% thought they would be *more* likely to get fat. In the tables reporting these results, smokers and non-smokers were not distinguished.

Overall, attitudes changed very little between Waves 1 and 2, but there was a marked shift over the second half of the study in the direction of becoming less unfavourable to smoking. Unfortunately, the interpretation of these findings is complicated by changes in the wording of the attitude questions at Wave 3.

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Are changes in attitudes followed by changes in behaviour?

A question of longstanding interest among social psychologists is the relationship between attitudes and behaviour. To what extent, and under what conditions, do attitudes influence behaviour and vice versa? If measures of attitudes and behaviour are obtained on the same subjects at two time points, then it is possible, in principle, to examine the relative sizes of the attitude-to-behaviour and the behaviour-to-attitude links (as well as the stability effects of attitude-to-attitude and behaviour-to-behaviour). This analysis assumes that the time lag is an appropriate one, and, as in any attempt to draw causal inferences from correlational data, that other relevant variables have been included in the model. The OPCS report stops short of such an analysis, but it nevertheless provides some data of interest on this issue.

One section of Chapter 4 examines the hypothesis that a change in attitudes between Wave 1 and Wave 2 would be related to behavioural change between Wave 2 and Wave 3. Children who had never smoked at all at Wave 2, but had taken up smoking by Wave 3 were somewhat (though not significantly) more likely to have developed more positive views about smoking between Wave 1 and Wave 2. However, there was no evidence of any similar change among those who had tried smoking once between Waves 2 and 3, nor among those who had tried smoking by Wave 2 and had subsequently taken up smoking (Table 4.18, p. 25). The author concludes:

> These data in themselves do not provide a sufficient basis to allow the Fishbein theory of reasoned behaviour to be discounted, although they do show that it is virtually impossible to test on this population. It may well be the case that a decision to have a cigarette is preceded by a change in attitude, but if the two events are close together in time, then the survey would be likely to show it as accompanying a change in behaviour, rather then preceding it. (p. 25)

On the other hand, in the multivariate logit analysis reported in Chapter 8 among those pupils who had never smoked at Wave 1, attitudes at Wave 1 was one of the factors found to have an independent effect on subsequent behaviour (whether or not they had taken up smoking by Wave 3).

Can children predict their future smoking status?

All pupils were asked whether, by the time they were 15, they would be 'a regular smoker, an occasional smoker, or someone who does not smoke at all?'. Although the children underestimated the chances that they would become a smoker, their expectations were predictive of future smoking behaviour. Overall, those who predicted at Wave 1 that they would be a smoker at age 15 were almost four times more likely to be a current smoker at Wave 3 than those who predicted that they would be a non-smoker (calculated from Table 4.22, p. 26). This is a sizeable effect by any standards in the smoking field. Expectations remained predictive even when initial smoking experience was controlled, although the effect was attenuated. Furthermore, in the multivariate analysis in Chapter 8, expectations at Wave 1 had the largest independent effect on outcome. The other 'risk factors' for taking up smoking were: being a girl, having brothers or sisters who smoke, having parents who smoke, living in a lone parent family, having less negative attitudes about smoking, and not intending to stay on in full-time education after 16.

A number of longitudinal studies of children's smoking (reviewed in Sutton, 1989b) have also found that expectations predict behaviour. Some of these studies used very long follow ups. In the National Institute of Education (1979) study, for example, adolescents' self-prediction of their future smoking status was found to be the best predictor of actual smoking status 5 years later. Expectations have been shown to predict other smoking behaviours, too. In particular, abstinent subjects' self-efficacy expectations predict subsequent relapse, at least in the short term (Sutton, 1989a). As before, there are two possible explanations. Either expectations themselves influence future behaviour (an example of a 'self-fulfilling prophecy'); or expectations and behaviour have common or correlated causes.

The OPCS data also suggest that expectations change over time in the *absence* of behaviour change. For example, among those pupils who were categorized as consistent smokers (regular or occasional smoker at all three waves), the proportions seeing themselves as future regular smokers rose from 16% at Wave 1 to 49% at Wave 3 (Table 4.31, p. 30). In the author's words, 'Smokers apparently became more resigned to being smokers..., and non-smokers became more confident about their ability to remain as such' (p. 27).

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Conclusion

If we consider the risk factors for taking up smoking that have been identified in the OPCS study, it is evident that although we know something about *who* starts smoking, we still know relatively little about *why* they start. For example, knowing that 'being a girl' is an independent risk factor for starting to smoke, at least in the restricted age-range studied in this report, means that we can, if we wish, target this half of the school population with measures aimed at reducing or postponing the uptake of smoking. What it doesn't tell us is what we should be putting into such programmes. We need to know *why* more girls than boys take up smoking. With the possible exception of 'attitudes', the same can be said for most of the other risk factors. Given the likely complexity of the processes involved, even a study with the relatively sophisticated methodology of a 3-wave longitudinal design cannot be expected to provide more than a few helpful clues concerning the factors associated with starting to smoke. It is therefore not a criticism of this study to say that it raises as many questions as it anwers. What we need now is more finely-grained process research designed to disentangle alternative explanations for these consistently observed relationships.

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Why children start smoking: the need for comprehensive tobacco control policy

From Ann McNeill (Health Education Authorit Hamilton House, London)

The majority of smokers take up the habit durin adolescence, and identifying those children mos likely to become smokers has been the focus c numerous studies. I rather hope that the large-scal longitudinal study described by Goddard in *Wh Children Start Smoking*[1] will bring the search t identify such children to an end. Goddard con cluded that there is no simple explanation for wh children start to smoke and that instead man factors are involved. This conclusion reinforces th findings of most previous studies in this field.

Let us take stock of what this means for smokin prevention beginning with those factors that God dard identified as playing a role, albeit a small one in smoking uptake.

Thinking that one might be a smoker in the futur and having siblings or parents who smoke predicte the later uptake of smoking. Such variables are product of the acceptability and prevalence o smoking in society. The implications of this are obvious. More resources and time need to be pu into reducing adult smoking prevalence before w can legitimately expect to see major declines i smoking uptake.

Three other factors emerged which suggest pos sible targets for smoking education: being a girl living with a lone parent and anticipating no staying on in full-time education after age 16.

At a given level of consumption, girls were found to be more likely to be dependent on cigarettes than boys. This increased dependence could be eithe psychological or pharmacological, but it could explain why the girls were more likely to continu smoking than boys.

An overwhelming majority of the pupils knew th health risks of smoking and had negative attitude towards the habit. Despite, this, many still took up smoking and having *relatively* less negative view about smoking was a predictor of this. It is really no surprising that, for adolescents, other factors may override general attitudes and health beliefs abou smoking. Adolescence is a rapidly changing phase in

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development and external influences can vary widely from day to day. Having being tempted to try a few cigarettes, it is likely that more than half such triers will go on to further experimentation with cigarettes.[2]

Regular smoking for both boys and girls appeared to be particularly tenacious. Eighty-two per cent of regular smokers at the first survey were still smoking at the second, and 89% of regular smokers at the second were still smoking at the third. Furthermore, 61% of smokers at the third survey reported having tried to give up smoking for good and failed. These results confirm those found elsewhere[3] and it has also been demonstrated that children learn to inhale nicotine from a very early stage in their smoking careers.[4] It seems likely, therefore, that pharmacological factors play a role in this persistence of the adolescent smoking habit. It is disturbing that another generation of cigarette smokers is already waiting in the wings.

In addition to the possible targets for health education mentioned earlier, Goddard highlighted other courses of action which would play a role in decreasing smoking uptake. First, decreasing the availability of cigarettes. She points out that the three most popular brands were all available in packets of ten, making them more affordable to children with little money. Perhaps packets of ten cigarettes should be outlawed in addition to single cigarettes. Secondly, an advertising ban—these data lend yet more support to the view that tobacco advertising promotes smoking among young people. Greater awareness of cigarette advertising was associated with a slightly increased likelihood of starting to smoke. Thirdly, increases in taxation which have been demonstrated elsewhere to affect children's smoking.

Although all possible predictors were not measured in this study, it is clear that we have a very comprehensive picture of what needs to be done to prevent more children from taking up smoking. Of course, further finely-tuned analyses or research might throw more light on the subject, but it is difficult to see how the results of such analyses could radically alter the course of action outlined above. For example, one of the main avenues for reaching children is through schools and research indicates that school health education has a role to play in delaying smoking uptake.[5] All children must receive school education about smoking because *all* children are exposed to cigarette smoking and promotion in our society, and vulnerable to such pressures to take up the habit.

There are a number of ways in which young people can be prevented from taking up smoking. The Health Education Authority's Teenage Smoking Programme, in addition to using formal school education approaches, addresses non-smoking messages to young people through their own media and culture in an endeavour to make non-smoking their cultural norm. This programme has already achieved favourable changes in attitudes in young people.

However, marked decreases in teenage prevalence cannot be expected until there is a reduction in adult smoking prevalence. The latter will be achieved through a comprehensive tobacco control policy strategy involving measures such as a strong health education programme together with the three steps outlined by Goddard above.[5] Until this happens, we are unlikely to find a simple answer to the question of 'Why children start smoking' and, therefore, are unlikely to make major inroads into reducing smoking uptake.

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Health behaviour in schoolchildren A WHO cross-national survey*

A presentation of philosophy, methods and selected results of the first survey

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SUMMARY

"Health Behaviour in Schoolchildren. A WHO Cross-National Survey" was started by researchers from three European countries. Presently, more than 10 countries within the European region of WHO are accepted as members of the project.

The study is oriented towards behavioural and social science, and its basic philosophy is described as a lifestyle approach. In the first part of this article, differences between traditional epidemiological research and lifestyle research are outlined. The concept "lifestyle" is clarified, and the focuses of lifestyle, health promotion and health education research are described. It is argued that aspects of lifestyle not considered to be directly related to mortality or morbidity may be more important for an understanding of lifestyle of individuals or groups than aspects more directly related to health.

Health-related habits, lifestyle and psychosocial aspects of health are chosen as criterion variables of the study. The personal and environmental context of lifestyle are the main factors on the predictor side, and the findings should also be discussed in a demographic and macrosocial context.

National cross-sectional surveys (n at least 3000) are carried out regularly in an increasing number of countries. Data are collected anonymously at school, covering three age groups (mean age 11.5, 13.5, and 15.5 years). One part of the questionnaire consists of a core of questions and is repeated in every survey. The other part has a special focus which changes from survey to survey. Comparability of data across countries is given high priority.

Results from the first survey (1983–84) are presented to illustrate the relative importance of country, indicators of inequality, social network, and beliefs in the harmful effects of smoking as predictors of smoking habits. The results confirm that a wide range of predictors are important.

In line with the philosophy of the project, the focus of the second survey (1985–86) is on physical activity (as a positive health habit) and psychosocial aspects of health.

Finally the report mentions some of the more practical and administrative problems related to this kind of cross-national research, and describes some of the limitations of large-scale cross-national surveys.

* The World Health Organization—EURO, Health Education Unit (Ilona Kickbusch, Regional Officer, Desmond O'Byrne, Technical Officer) has adopted the project as a WHO collaborative study. International planning meetings have been arranged by WHO. The present publication does not necessarily reflect official WHO policy.

** International coordinator of the first survey.

*** In collaboration with: Pam Gilles (England) Brigitte Gredler (Austria) Frank Ledwith (England) Peter Lorant (Austria) Per M. Løchsen (Norway) and Jorma Tunjala (Finland).

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INTRODUCTION

In 1982 the planning of a cross-national survey on health behaviour in schoolchildren was started by researchers from three countries: England, Finland and Norway. Shortly after, the project was adopted by the World Health Organization for Europe as a WHO collaborative study. The first survey was carried out in the three pioneer countries and in Austria in the winter of 1983–84.

A second survey has been planned for 1985–86, and at this stage, 18 countries have considered participating. Eleven countries have been accepted, and are planning the collection of data. New surveys are to be conducted regularly. According to the present study protocol, data will be collected every second year.

The first survey was coordinated by the Department of Health Sciences, University of Jyväskylä, Finland. The second survey is coordinated by the Department of Social Psychology, University of Bergen, Norway.

The purpose of this article is to introduce the study to a wider audience, and to describe the aims, the basic philosophy, the principles and the methods of the study. Some examples of the kind of results to be reported, and possible interpretations of these findings, are also given. The study has been previously presented at conferences (Kannas et al., 1984, Aarø et al., 1984, Aarø et al., 1985) and in reports to WHO (Kannas et al., 1986, Rimpelä et al., 1986).

The philosophy of the school-children project

The overall goal of the survey is to increase our understanding of lifestyle and health behaviour and their context in the lives of young people. In areas where there is reason to believe that environment, lifestyle and behaviour influence health, another kind of research should follow: studies on lifestyle, health behaviour and attitudes, and on the factors influencing these health-related characteristics of individuals. Unfortunately this field of research is not as yet well defined or developed. Figure 1 shows the relationship between lifestyle and some factors related to lifestyle.

Epidemiological research is concerned with the relationship between health on the one hand, and environment and lifestyle on the other. By health we refer to somatic, mental and psychosomatic health. For epidemiologists, the main task is to identify factors which may influence health.

In epidemiology it is important to identify statistical associations, to determine *causality* of relationships, and to quantify the strength of these relationships. Consequently, epidemiological research focuses strongly on those aspects of lifestyle and environment which it is possible to measure in mass surveys, and which may have an impact on health. Traditionally, mortality and morbidity have been the most important criterion variables, and consequently epidemiology has focused on health-damaging factors and named these risk-factors. Within this tradition, there is no fundamental difference between variables like systolic blood pressure, smoking behaviour, environmental strain, air pollution and lack of social support. They are all possible risk factors. Aspects of lifestyle and environment having no impact on health are not of interest within this paradigm. Epidemiological research focuses first of all on arrows 1 and 2 in figure 1.

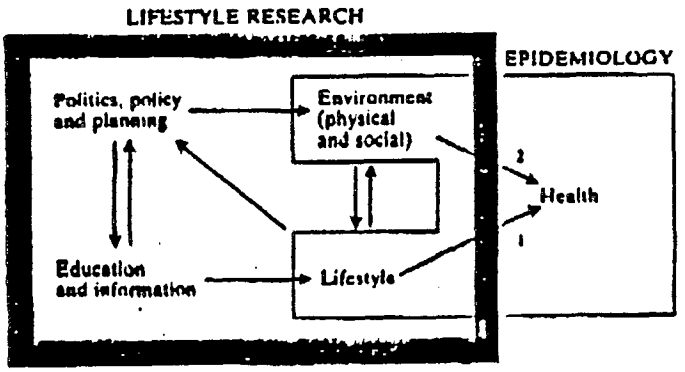

Figure 1 Health, lifestyle and its context, some principal components and their interrelationship. A simplified model.

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Another kind of research involves studies on lifestyle and its context. Our assumption is that lifestyle research should be based on a philosophy and assumptions which are qualitatively different from those of epidemiological research. Some basic clarifications are needed, before describing the differences in more detail:

Lifestyle is understood as relatively stable patterns of behaviour, habits, attitudes and values which are typical for the groups one belongs to, or the groups one wants to belong to. This definition is close to the one proposed by Wenzel (1982). Wenzel defines the lifestyle of an *individual* as the entirety of normative orientations and behaviour patterns which are developed through processes of socialization. This means first of all that lifestyle is not only behaviour, but also includes the attitudes and values of the individual. It also means that these aspects of the individual must be more or less interrelated, and therefore deserve to be labelled "patterns";

The above definition also implies that even though the "entry point" of the phenomenon is the properties of the individual, these properties are closely linked to social and physical surroundings. It also includes patterns of behaviour, habits, attitudes and values which are not necessarily in harmony with the groups an individual belongs to, as long as these patterns are anchored to other reference groups.

The lifestyle of an individual, or of individuals belonging to a specific population subgroup, is related to the socioeconomic circumstances and by the resources available to its members. Even when a certain lifestyle is not dependent on material resources, the adaptation to new lifestyles, like changing health habits, may require different kinds of resources. Prerequisites for changes in health-related aspects of lifestyle may be: access to information, support from significant others, mental surplus, and in some instances also a low-strain life situation. These aspects are taken care of in one of the definitions of lifestyle proposed by WHO (1983). It is maintained that lifestyle is dependent on socio-economic circumstances, and that the ease with which an individual may choose certain lifestyles over others varies.

The scope of lifestyle research

Behaviour and habits which have been shown to predict death or disease comprise only one part of the total lifestyle of an individual. Aspects of lifestyle found relevant to health through epidemiological research, may not necessarily be the same aspects as are important for an understanding of lifestyle itself. For example, one important aspect of the lifestyle of young people concerns their leisure time activities. The degree to which they spend their time with peers or with adults is a strong predictor of addictive behaviour like smoking or use of alcohol. Time spent outside the home with friends is one possible element in an operationalization of affiliation to peer groups. It may give an indication of young people's preferences as far as the conflict between adult values and peer group values is concerned. From an epidemiological point of view, however, time spent outside the home with friends may be of less interest.

Figure 2 shows the relationship between some important factors in lifestyle research. One important point is that the health-related aspects of environment and lifestyle comprise only one part or one aspect of environment and lifestyle. Focusing on the health-related aspects exclusively may hinder an understanding of how lifestyle is influenced, and changes over time. Studying lifestyle from an epidemiological point of view may be compared to studying climate and weather processes from the periscope of a submarine. It may be possible to classify the weather as good or bad, and from a large number of observations even to calculate the risk of shipwreck. It would be an extremely difficult undertaking, however, from such a limited and narrow perspective to develop an understanding of the processes behind changes in climate and weather.

The scope of lifestyle research is broader in several different ways:

1. As already mentioned, other aspects of lifestyle than those directly related to health may be important for an understanding of lifestyle itself.
2. Other aspects of environment than those related to health may be important in order to understand how lifestyle is influenced. The attitudes of parents and other members of the family to physical activity and sport are an important predictor of young people's involvement in physical activity, but do not in themselves influence health in a consistent and predictable way.
3. Personal characteristics other than those

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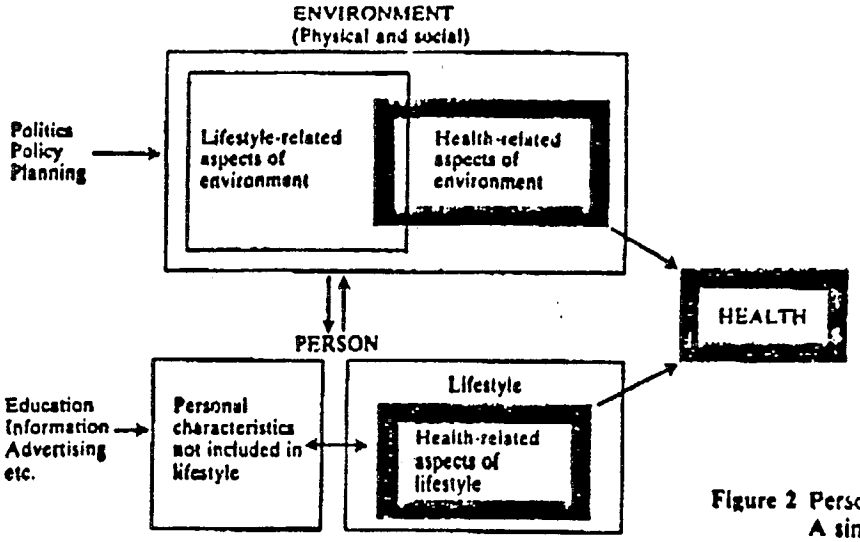

Figure 2 Person, environment and lifestyle. A simplified model.

included in the lifestyle concept may be important for an understanding of how lifestyles develop and change. Personality may predict ability to stop smoking. Cognition (if defined as separate from the concept "attitudes") (Shaw & Wright, 1967) may stabilize attitudes relevant to lifestyle.

4. Lifestyle research studies the relationship between person and environment from a socio-psychological and ecological perspective, taking into account the macrosocial context.

Figure 3 is an overview of some important differences between the traditional epidemiological approach and a lifestyle approach. The description is "idealtypisch", and is not intended to be a thorough and balanced characterization of all branches of current trends in epidemiological research. Further, it is mainly a description of the epidemiology of somatic disease.

The interpretation of relationships

In epidemiological research, it is important to identify causal relationships between variables. A risk factor is only a risk factor if, on the basis of all available evidence, it can be shown to influence health. To investigate causal relationships, other

An epidemiological approach:	A lifestyle approach:
a) Identification and quantification of causal relationships	a) Describing and understanding processes
b) Relationships between one dependent and a limited number of independent variables	b) Relationships in more complex systems and networks of variables
c) Focusing on variables which may explain mortality, morbidity and health	c) Focusing on variables which may increase our understanding of human beings in a social context
d) Associations which are relatively constant over time and across cultures and countries	d) Processes changing over time and depending on culture, country and circumstances
e) Isolating relationships	e) Describing and analyzing in a wider context

Figure 3 An epidemiological versus a lifestyle approach.

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factors are first of all regarded as confounding variables which should be controlled for.

In lifestyle research, the causes of a particular kind of behaviour will seldom be identified as a limited number of independent factors. Very often, the process itself is the only possible explanation.

When young people start smoking, the most important predictor is the smoking behaviour and smoking-related attitudes of "significant others". The strongest statistical relationships are found with the smoking habits of the best friend. It cannot be concluded from this that a person's smoking habits were caused by the smoking habits of the best friend, or vice versa. It is possible that with another combination of friendships, none of the persons concerned would have become smokers. It is also possible that if the interpersonal relationship between two young people had developed slightly differently, neither of them would have started experimenting with smoking. A description of such interpersonal processes may be more important for an understanding of smoking behaviour in teenagers than merely identifying strong predictors of smoking.

Our view is not that causality is unimportant in lifestyle research. In the case of intervention especially, it is important to identify the *effects* of the intervention. The important point in this context is that the perspective of establishing causal relationships is insufficient for an understanding of how lifestyles develop, are maintained and are changed.

Person and environment

Environmental factors are probably the group with the strongest influence on lifestyle. As already mentioned, the strongest predictors of smoking youths, are significant others' smoking behaviour and others' attitudes to smoking. Similar findings are reported in studies on physical activity. Concepts like "behavioural norms", "norms of opinions", "social network", "social support", "model learning", and "climate of opinions" are therefore of central importance to lifestyle research.

This is reflected in our way of using the word "lifestyle". Lifestyle refers to patterns of behaviour, habits, attitudes and values which are *typical of the groups one belongs to or of the groups one wants to belong to*. One implication of this is that lifestyle research focusing exclusively on personal factors like attitudes, motivation, beliefs and opinions, represents an *individualization of social problems*. The lifestyle of an individual can only be understood in its environmental context.

Another problem is *neglect of the personal factor*. Restrictions on the advertising of harmful products and restrictions of the products themselves are interventions in the environment. Such restrictions may be impossible to impose, however, without the support of the public in general. If they are passed, the effects may not always coincide with the intentions. A few years ago, a proposal to reduce the percentage of alcohol in beer was put forward in the Norwegian Parliament. This led to a mass of protests, and these protests were supported by a large number of young people. The proposal was withdrawn and the net effect of the publicity was probably negative. The personal factor had been neglected.

The school-children study and lifestyle research

The study on "Health behaviour in schoolchildren. A WHO cross-national survey" can be characterized as a *lifestyle* project. The approach is not epidemiological. This does not, however, exclude the possibility of findings relevant to epidemiology. Data from the first survey (1983–84) can for example be used to analyze the relationship between respiratory symptoms and smoking behaviour (Aarø et al., 1985).

The study does not focus only on aspects of lifestyle directly or indirectly relevant to somatic health. It also includes mental and psychosocial aspects of health. In the field of mental and psychosocial health, the survey includes not only indicators of lifestyle, but also indicators of health. This is partly because mental health itself may be an important predictor of lifestyle. Further, it considers the lifestyle of human beings in a *social and environmental context*, not exclusively in an individual one. It is not a health promotion or a health education project. Interventions are not a part of the project itself. One extremely important goal, however, is to influence national policy in the field of health promotion in young people. The project is not essentially an evaluation project, although cross-national comparisons of trends may throw some light on the effects of national health promotion policy.

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Aims of the school-children study

The central goal of the project is to increase our knowledge and understanding of lifestyle and health behaviour and their context in young people. The surveys constitute the major empirical base of the project. Several kinds of results will be available from the data collections. The most important groups of questions are the following:

1. Health-positive and health-negative aspects of behaviour, habits and lifestyle in general
2. Personal characteristics related to lifestyle
3. Perceived environmental conditions related to lifestyle (physical as well as social).
4. Perceived health

These groups of questions can be analyzed against background variables as well as against each other. Of central importance is the analysis of perceived health by lifestyle and of lifestyle by personal characteristics and environmental conditions.

Further, these variables and the patterns of associations between them can be studied over time, across countries, and time trends can be compared between countries. The findings must be described in a context where national and regional cultures and policies are taken into account.

One important goal is to develop national expert and resource groups in the field of lifestyle research in young people. Last, but not least, the findings and results of the project must be communicated to politicians, decision-makers, school authorities, teachers, pupils, and the public in general. This communication of results is the responsibility of the national project groups as well as WHO.

METHOD

Overall plan

The plan is to carry out surveys among school-children in a number of European countries. The collection of data should take place within a specific, limited period of time, and the pupils of each grade included should have approximately the same mean age and age variation. The questionnaires should be translations of an international standard version, and comparability between countries should be ensured as far as possible. This implies the application of a standard procedure for the collection of data, and standardized procedures for analysis and presentation.

Further, surveys should be carried out in an increasing number of countries at regular intervals, preferably every second, third or fourth year. A "core" of questions should be repeated in every survey, allowing for comparisons of trends over time. These core questions cover a wide range of health-related habits like smoking behaviour, physical exercise, food habits, use of alcohol, use of seat belts, oral hygiene, and sleeping habits. The rest of the questionnaire constitutes the "special focus" of the survey. This part of the study is also common to all countries, but changes over time. The special focus of the first survey (1983–84) was on smoking habits in an interpersonal and intrapersonal context. The special focus of the second survey (1985–86) is on physical activity and the psychosocial aspects of health (See also Aarø et al., 1985 and WHO, 1985).

Study population and sample

The study population is defined as children aged 11, 13 and 15 years. The ideal is to have a sample of pupils from these three age groups with the following mean age: 11.5, 13.5, and 15.5 years. At least 90 per cent of the children should be within the age range plus or minus half a year, and none of the pupils should be outside plus or minus one year from the mean age of the relevant age group. The samples should be representative of whole countries, or of geographical units with more than one million inhabitants. The procedure for collection of data favours a sampling procedure with classes or schools as the sampling unit. To reduce standard errors of estimates, classes are preferred as the sampling unit. The sample size should be at least 1 000 pupils of each grade in each country. The total sample size in each country is therefore at least 3 000 children.

Data collection procedure

The questionnaire consists mainly of pre-categorized questions. It is to be filled in by the pupils in the classroom. The administration of the data collection in the classroom can be delegated to teachers or to other professional groups after special training in data collection. An important principle is to apply a procedure

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ensuring anonymity or confidentiality. Different solutions are chosen for different countries. In many countries, the questionnaires are collected only after they have been put into envelopes sealed by the pupils themselves. Before filling in the questionnaires, the pupils should always be informed about the procedures, and encouraged to give answers as honest as possible.

Data processing and analysis

The data collected in each country are computerized by the national group of researchers. The procedure for coding and the package for statistical analyses are common for all countries. After national computerization of the data, all data files are exported to the coordinating centre for "cleaning". A common comprehensive data file is constructed, allowing for efficient and comparable analyses of similarities and differences between countries. The international set of data is re-exported to those countries who want to participate in the international reporting of results. International reporting can only take place after agreement with the other countries involved, with the coordinating centre, and with WHO.

The number of analyses which can be performed on a set of data with approximately 150 variables and samples of more than 3 000 pupils from several countries, and with repeated surveys at regular intervals, is large. Even if only a small proportion of these possibilities is of substantial interest, the richness of a survey with this design is striking. A more detailed description of methods is available (Aarø et al., 1986).

Data collection of the first survey (1983–84)

As mentioned above, the data collection of the first survey took place in four countries. In Austria the sample consisted of 3 083 pupils from 120 classes and 40 schools. In Norway the final sample comprised 3 403 schoolchildren from 80 schools. The sampling unit was the school in both countries. The Finnish research group was able to use classes as the sampling unit. The final sample comprised 3 618 pupils from 154 schools. Independent samples were selected for each grade.

For practical and economic reasons it was not possible to carry out the survey among a sample of pupils from all over England. Instead schoolchildren from two cities (Nottingham and Salford) were chosen as the study population. Pupils (3 398) from 28 schools participated in the English part of the study.

A more thorough description of sampling procedures, response rates etc. is given by Kannas et al. (1986). The sampling procedures applied ensure representativity, and the rates of non-response were moderate in all countries.

The computerized data were exported to the Department of Social Psychology, University of Bergen for cleaning and inclusion in a common datafile for all countries. The cleaning procedures included the following:

- checking of inconsistencies
- redefining missing values into valid values using logical conditions
- deletion of cases with missing values for more than 75 per cent of selected variables
- deletion of cases out of range for age. Out of range was defined as being outside plus or minus one year from mean age of the relevant grade in the relevant country.

Selected results from the first survey (1983–84)

The first survey included several groups of questions:

1. Background variables (sex, grade, age, parents' occupation).
2. Reported health behaviour (positive and negative) as well as other relevant aspects of the lifestyle of young people.
3. Personal characteristics related to health behaviour (primarily smoking habits) and lifestyle (beliefs, opinions, self-image etc.).
4. Perceived characteristics of the physical and social environment (smoking behaviour and attitudes of significant others, school environment etc.)
5. Aspects of health (psychosomatic and psychological complaints, height, weight, morning cough etc.).

The main focus of the first survey was on smoking habits and their intra-and interpersonal context. We will look at this field as an example. Three particular aspects will be elucidated briefly:

1. Differences in smoking habits between countries, across grades and between boys and girls
2. Smoking habits related to selected predictors (school achievement, attitude to school, plans for the future, country, number of smokers in close family)

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3. Belief in the harmful effects of smoking related to the same set of predictors, and to smoking habits.

These issues touch upon some of the central problem areas of current smoking and health education. First, a comparison of prevalences of smokers between countries (and preferably comparison of trends) is of importance for the evaluation of national anti-smoking efforts. Secondly, the lack of strong associations between beliefs and smoking habits raises doubts about some of the traditional (medical and epidemiological) models of health education. Thirdly, since the school itself is considered one of the most important channels for communication of health education messages, it is important to study more carefully the relationship between smoking habits and the pupils' relationship to school. Taken as a whole, these areas of focus also throw light on the kind of factors of importance to health promotion among young people.

Prevalence of weekly smokers: cross-country comparison

Table 1 shows the prevalence of weekly smokers among boys and girls by grade and by country. The figures in this table are not directly comparable. An analysis of age by grade revealed clear differences in mean age within corresponding grades across countries. Finland and Norway were very close. In the highest grade, Finnish pupils were 0.1 years older than the norm, and Norwegian pupils were 0.1 years younger. However, the mean age of Austrian pupils of the corresponding grade is minus 0.7 years compared to the norm, and the English pupils were 0.6 years older than the ideal mean age. Adjustments for age are necessary before direct comparisons can be made between countries.

Figure 4 and Figure 5 show the percentage of weekly smokers by age and by country. Based on the assumption that the recruitment of smokers is equally (and linearly) distributed over seasons, the vertical distances between the lines can be considered valid estimates of differences in the proportion of weekly smokers between countries at a given age. Among boys, Finland has the highest percentage of weekly smokers through all age groups. The differences between the other three countries are relatively small. Among girls, all grade levels considered, the differences between countries are negligible. Among Norwegian girls, however, the proportion of weekly smokers increases more strongly between the middle (age 13) and the highest grade (age 15) than in any other country. (From 5.6 per cent to 27.6 per cent.) The general impression is that the countries involved in the 1983–84 survey are relatively homogeneous as far as the proportion of weekly smokers is concerned.

Smoking and health beliefs, cross-country comparisons

For three of the countries, a checklist of items dealing with the relationship between tobacco

Table 1 Weekly smoking by age, country and sex.

Country	Grade	BOYS Mean age	Smokes weekly? yes %	no %	total %	n	GIRLS Mean age	Smokes weekly? yes %	no %	total %	n
Austria	Low	11.0	1.0	99.0	100.0	483	10.9	0.4	99.6	100.0	481
	Middle	13.0	5.5	94.5	100.0	477	12.9	3.9	96.1	100.0	490
	High	14.8	16.9	83.1	100.0	544	14.8	19.0	81.0	100.0	469
England	Low	12.2	4.0	96.0	100.0	477	12.2	3.1	96.9	100.0	459
	Middle	14.1	10.6	89.4	100.0	649	14.2	20.3	79.7	100.0	600
	High	16.1	22.8	77.2	100.0	565	16.1	26.5	73.5	100.0	510
Finland	Low	11.6	5.0	95.0	100.0	605	11.6	1.0	99.0	100.0	604
	Middle	13.6	16.6	83.4	100.0	601	13.6	11.1	88.9	100.0	551
	High	15.6	30.1	69.9	100.0	555	15.6	25.4	74.6	100.0	570
Norway	Low	11.4	1.3	98.7	100.0	523	11.4	0.2	99.8	100.0	515
	Middle	13.4	8.7	91.3	100.0	599	13.4	5.6	94.4	100.0	623
	High	15.4	22.6	77.4	100.0	535	15.4	27.6	72.4	100.0	503

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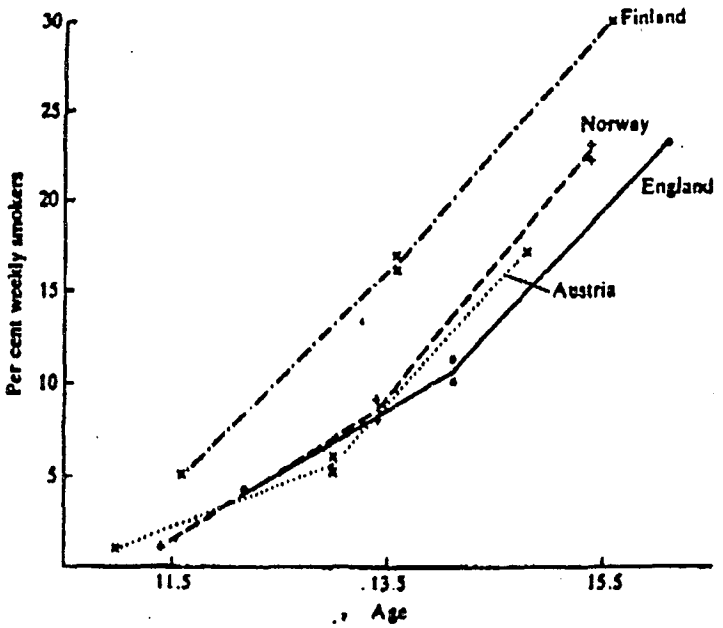

Figure 4 Proportion of weekly smokers by age and country: boys

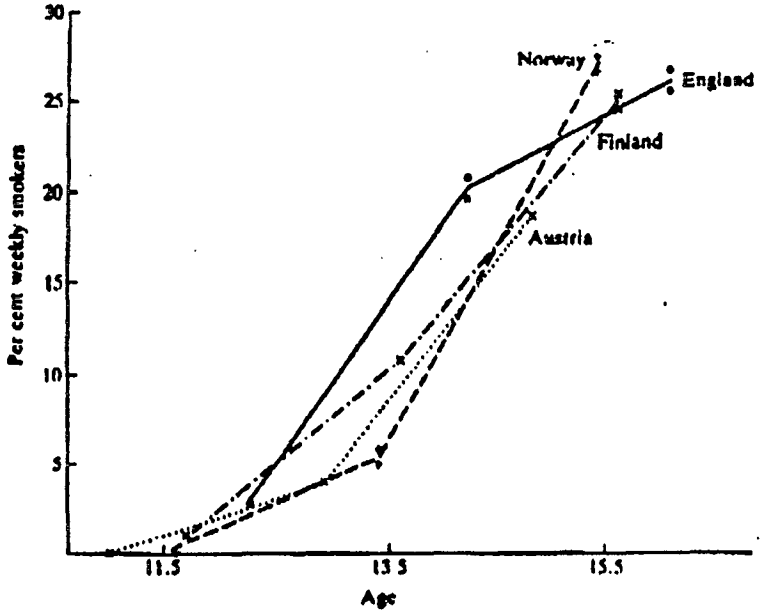

Figure 5 Proportion of weekly smokers by age and country: girls

smoking and health was included in the questionnaire. The items had to do with smoking and the risk of illness and death, passive smoking, smoking and pregnancy, and the short-term somatic effects of smoking. The smallest possible score on this scale is 0, and the maximum score is 10. High score means a strong belief in the harmful effects of smoking.

Figures 6 and 7 show mean scores and standard deviations by smoking habits and country

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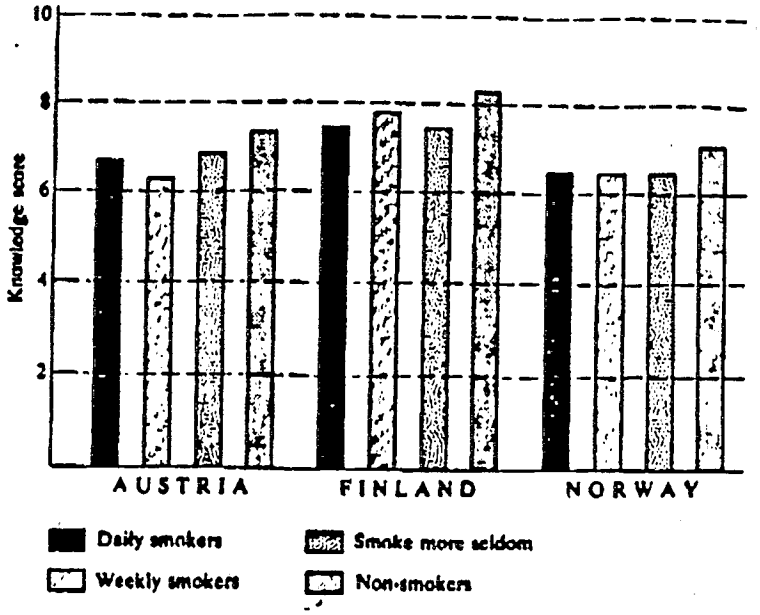

Figure 6 Tobacco and health belief score by smoking behaviour and country, boys, highest grade (age 15)

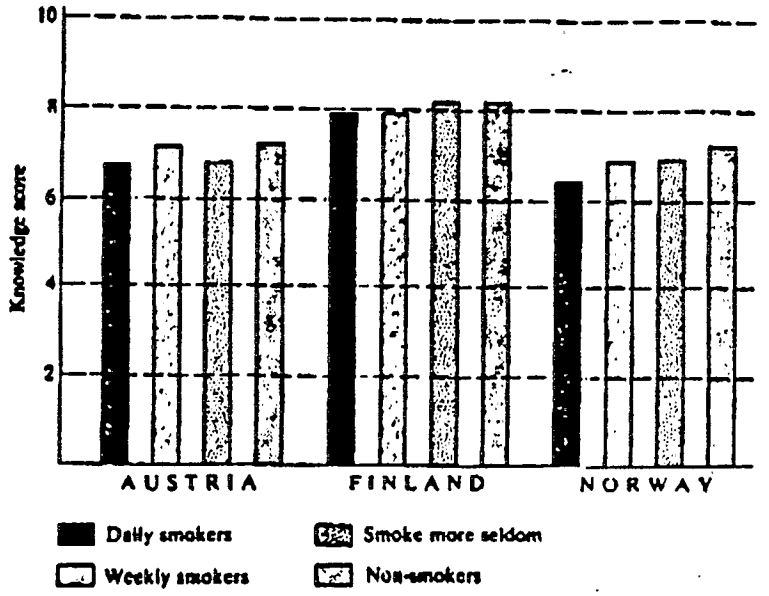

Figure 7 Tobacco and health belief score by smoking habits and country, girls, highest grade (age 15)

among pupils of the highest grade, for boys and girls separately.

In all countries, the differences between boys and girls were negligible (maximum 0.1 points). Comparisons between countries, however, show that a belief in the harmful effects of smoking is stronger among Finnish than among Austrian or Norwegian pupils. It may be worth noting that Finnish boys, who smoke more than boys from any other country, scored on average one point more on the smoking and health belief scale. It is known from other studies that the present trend

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among Finnish youth, after a period of decrease in the prevalence of smoking, is now less encouraging (Rimpelä, M., 1986, personal communication, manuscript under production). A strong belief in the harmful effects of smoking does not automatically guarantee that a decrease in smoking will take place.

Smoking habits predicted

Tables 2 and 3 show the prevalence of weekly smokers by school achievement, attitude to school, plans for the future and country. The presentation has been restricted to the highest grade level. When the grand mean in Table 3 is shown to be 0.23, this is to be understood as 23 per cent smokers among boys of the highest grade. The unadjusted deviations show the deviations from this mean for different subgroups. When boys who report being bad at school show a deviation of plus .17, this means that the prevalence of weekly smokers in this subgroup is 40 per cent. Among those who report being good at school, the prevalence is down to 9 per cent. Eta is a bivariate measure of association when the predictor is categorical, and the criterion variable is on an interval level (including dichotomies). Beta is the corresponding measure of association when other predictors have been controlled for.

For all the countries collapsed, the associations between the variables related to school and academic ambitions on the one hand, and weekly

Table 2 Proportion of weekly smokers by school achievement, attitude to school, plans for future, number of smokers in close family, and country. Boys. (highest grade 1) (approximate age 15). Multiple Classification Analysis.

Grand mean = 0.23

PREDICTORS Categories	n	Unadjusted deviations	eta	Adjusted deviations	beta
SCHOOL ACHIEVEMENT					
Bad at school	321	.17		.10	
.	829	.04		.02	
.	691	−.07		−.04	
Good at school	285	−.14	***	−.09	
			.23		.13
ATTITUDE TO SCHOOL					
Likes school	628	−.10		−.06	
Neutral	983	−.01		−.01	
Dislikes school	515	.14	***	.09	
			.21		.13
PLANS FOR FUTURE					
College, university	783	−.11		−.06	
Other	1343	.06	***	.03	
			.19		.10
NUMBER OF SMOKERS IN FAMILY					
0	739	−.10		−.08	
1	690	.00		−.01	
2	504	.05		.05	
3–4	193	.23	***	.19	
			.22		.19
COUNTRY					
Austria	535	−.06		−.05	
England	538	.00		−.03	
Finland	542	.07		.07	
Norway	511	−.01	***	.01	
			.11		.11

***: $p < 0.001$ (Chi square test for contingency tables)

1. In the case of dichotomous dependent variables, the smaller category should not contain an extremely low proportion of cases. The analysis of weekly smoking has therefore been restricted to the highest grade.

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Table 3 Proportion of weekly smokers by school achievement, attitude to school, plans for future, number of smokers in close family, and country. Girls, highest grade (approximate age 15). Multiple Classification Analysis.

Grand mean = 0.25

PREDICTORS Categories	n	Unadjusted deviations	eta	Adjusted deviations	beta
SCHOOL ACHIEVEMENT					
Bad at school	234	.22		.14	
.	837	.03		.01	
.	622	−.08		−.05	
Good at school	294	−.09	***	−.03	
			.22		.13
ATTITUDE TO SCHOOL					
Likes school	671	−.08		−.04	
Neutral	844	−.01		−.00	
Dislikes school	472	.12	***	.07	
			.17		.09
PLANS FOR FUTURE					
College, university	1039	−.09		−.05	
Other	948	.10	***	.05	
			.21		.12
NUMBER OF SMOKERS IN FAMILY					
0	673	−.15		−.13	
1	620	.02		.02	
2	474	.09		.07	
3–4	220	.22	***	.18	
			.28		.23
COUNTRY					
Austria	462	−.06		−.06	
England	494	.02		−.01	
Finland	566	.01		.03	
Norway	465	.02	**	.03	
			.07		.08

**: $p < 0.01$ (Chi square test for contingency tables)
***: $p < 0.001$

smoking on the other, are strong and statistically significant. The probability of being a weekly smoker increases when the student

- reports poor school achievement
- dislikes school
- has no plans for further theoretical education

This holds true for both sexes, and also when controlled (additively) for country and for other predictors in the equation. The contrasts between countries are considerably smaller than the contrasts between subgroups within countries.

Smoking habits are also strongly related to the number of smokers in the family. When no one in the close family is a smoker, 13 per cent of the boys and 10 per cent of the girls smoke weekly. When there are three or four smokers in the close family, the prevalence of weekly smokers is 46 per cent among boys and 47 per cent among girls.

Educational aspirations are also clearly related to smoking habits. Those who have plans for theoretical education after secondary school smoke less than those who do not. More detailed analyses have been made on data from each individual country. Additional differences between subgroups are found when splitting those who are not planning a theoretical education into those who are planning a practical education, those who plan to take a job, and pupils who expect to be unemployed. The highest prevalences are found among the last two groups.

The eta coefficients of school achievement, attitude to school, plans for the future and number of smokers in family are all in the range

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Table 4 Smoking and health belief score by smoking habits, school achievement, attitude to school, plans for future, number of smokers in close family, grade, and country. Boys, two highest grades 1) (approximate age 13 and age 15). Multiple Classification Analysis.

Grand mean = 7.24

PREDICTORS Categories	n	Unadjusted deviations	eta	Adjusted deviations	beta	
SMOKING HABITS						
Smokes daily	371	−.24		−.24		
Weekly	159	−.26		−.38		
More seldom	304	−.47		−.19		
Does not smoke	2317	.12		.09		***
			.11		.09	
SCHOOL ACHIEVEMENT						
Bad at school	518	−.07		−.10		
.	1226	−.17		−.11		
.	993	.14		.08		
Good at school	414	.26		.26		***
			.09		.07	
ATTITUDE TO SCHOOL						
Likes school	1173	−.12		.02		
Neutral	1401	.17		−.02		—
Dislikes school	577	−.15	.08		.01	
PLANS FOR FUTURE						
College, university	1154	.33		.17		
Other	1997	−.19		−.10		***
			.14		.07	
NUMBER OF SMOKERS IN FAMILY						
0	1230	25		.14		
1	1008	−.01		−.04		
2	694	−.28		−.12		
3–4	219	−.51		−.20		***
			.14		.07	
GRADE LEVEL						
Middle (age 13)	1563	−.10		−.15		***
Highest (age 15)	1588	.10	.06	.15		
					.08	
COUNTRY						
Austria	1004	−.22		−.18		
Finland	1125	.72		.72		
Norway	1022	−.58		−.61		***
			.31		.31	
	R2 = .14					

***: $p < 0.001$

1. Questions on the harmful effects of smoking (beliefs) were not asked in England, and not in the lowest grade in Norway.

0.17 to 0.28, for both boys and girls. The beta coefficients of all the predictors which have to do with school are somewhat lower, varying from 0.09 to 0.13. A closer inspection of the data reveals relatively strong intercorrelations between these variables, indicating that a more complex path model might have been tested out.

Beliefs and predictors of beliefs

Tables 4 and 5 show the association between the belief that smoking is harmful on the one hand, and several predictors on the other. A comparison of various groups of smokers and non-smokers as regards the differences in health beliefs, shows a weak, but statistically significant

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Table 5 Smoking and health belief score by smoking habits, school achievement, attitude to school, plans for future, number of smokers in close family, grade, and country. Girls, two highest grades (approximate age 13 and age 15). Multiple Classification Analysis.

Grand mean = 7.12

PREDICTORS Categories	n	Unadjusted deviations	eta	Adjusted deviations	beta
SMOKING HABITS					
Smokes daily	316	−.11		−.10	
Weekly	149	.16		.00	
More seldom	261	−.40		−.09	
Does not smoke	2345	.05		.02	—
			.08		.03
SCHOOL ACHIEVEMENT					
Bad at school	362	−.15		−.17	
.	1313	−.23		−.13	
.	973	.20		.07	
Good at school	423	.40		.37	***
			.14		.10
ATTITUDE TO SCHOOL					
Likes school	1404	−.19		.01	
Neutral	1237	.28		.03	
Dislikes school	430	−.16		−.06	
					0.2
PLANS FOR FUTURE					
College, university	1438	.45		.24	
Other	1633	−.39		−.21	***
			.24		.13
NUMBER OF SMOKERS IN FAMILY					
0	1156	24		.08	
1	1001	.04		.03	
2	681	−.26		−.09	
3–4	233	−.56		−.29	**
			.14		.06
GRADE LEVEL					
Middle (age 13)	1578	−.30		−.28	
High (age 15)	1493	.32		.29	***
			.17		.16
COUNTRY					
Austria	−.36		−.27		
Finland	1106	.85		.76	
Norway	1020	−.59		−.58	***
			.36		.33
	R2 = .20				

**: p < 0.01 ***: p <0.001

association. The non-smokers seem to have a slightly stronger belief than the smokers in the harmful effects of smoking. The differences between countries are much larger, however, than the differences between groups with different smoking behaviour. A one-way analysis of variance revealed the association (eta) with countries to be .31 for boys and .36 for girls. The corresponding correlations with smoking habits were .11 for boys and .08 for girls.

The variables measuring relationship to school are significantly, but moderately associated with the belief that smoking is harmful to health. In fact, these predictors seem to be more strongly associated with smoking habits than with the belief that smoking is harmful to health. While

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smoking habits are only moderately associated with country, belief is essentially dependent on country. Further, the analyses of the data reveal that pupils from a smoke-free home environment and pupils who plan a theoretical education after secondary school, have a stronger belief than the average pupil in the harmful effects of smoking. It may also be worth noting that when other variables are controlled for, there is no correlation at all between the attitude towards school and beliefs concerning harmful effects.

DISCUSSION

Summary of findings

Some of the above results are well known from several studies in young people, and some are new. The main findings can be summarized as follows:

- In all countries, the increase in the prevalence of weekly smoking is very strong across the age groups 11 to 15 years.
- The prevalence of weekly smokers does not differ much from country to country. One exception is that the proportion of weekly smokers among boys is higher in Finland than the other countries. This is the case for all grades.
- For Norwegian girls, an extremely strong increase in prevalence of weekly smoking is observed from age 13 to age 15.
- The smoking and health belief score is high for all countries, and the standard deviations are low. This implies a relatively strong belief in the harmful effects of smoking in all countries, and a high degree of homogeneity within countries.
- Smoking habits are only weakly related to the belief that smoking is harmful to health.
- The country with the highest mean score on smoking and health belief is Finland. The prevalence of weekly smoking, however, is not correspondingly low. Among boys the prevalence of weekly smoking is higher in Finland than in any other country.
- Weekly smoking is strongly correlated with a negative attitude to school, poor school achievement (reported) and no plans for a higher theoretical education.
- Weekly smoking is strongly correlated with a number of smokers in the close family.

Variables of different kinds seem to predict smoking behaviour and the belief that smoking is harmful to health. Significant associations have been found with educational aspirations, characteristics of the social network, reported school achievements, and attitude to school. Country is also of importance, especially when belief is taken as the criterion variable.

Implications of the findings

The relatively low correlation between belief and behaviour corresponds well with conclusions from several studies (Evans, 1979). It seems increasingly obvious that strong predictors of smoking behaviour are to be found in the social environment, in the social network, in the relationship to friends and close family, in the relationship to school. A personality and individualizing approach to understanding and changing lifestyle is gradually being replaced by an environmental and social approach. Results from the present study indicate that this process should be encouraged.

The most important target groups among young people are, to a large extent, those who have developed a negative attitude to school. They also report doing badly at school, and they do not have plans for a higher theoretical education. More thorough analyses of the present data have revealed that this finding is fairly consistent across countries. One possible conclusion is that one of the most important channels of communication for reaching and influencing young people's smoking habits, the school, has limited appeal to the typical young smoker. On the contrary, smoking and health education as it is practised traditionally in the school, may be one of the least effective ways of convincing and influencing those at whom it is directed. This calls for the design, construction and testing out of actions and "packages" for smoking and health education which will also appeal to and involve pupils who are "fed up" with school.

The strong associations between variables related to school and smoking habits may reflect a more general phenomenon: the tendency for children from low status segments of the population to develop health habits which are not favourable to health. Wold & Aarø (1985) have demonstrated that this seems to be the case in young people as far as physical exercise is concerned. Additional analyses of the present data, however, have shown moderate associations with father's occupational status, indicating that socio-economic inequality may explain only a

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part of the above findings. The relatively low precision and reliability of children's reports of their parents' occupation and the problems connected with a proper classification of their answers call for further exploration.

The lack of clear differences in smoking habits between countries probably reflects the selection of countries involved in the study in 1983–84. However, since Norway and Finland are countries with a restrictive legislation on advertising of tobacco products, and the other two countries are not, a difference might have been expected. No such systematic differences are found. Obviously, comparisons of trends over time represent a more solid empirical basis for further elaboration of this phenomenon.

Experiences from the first survey (1983–84)

The 1983–84 survey has revealed several practical and methodological problems in connection with cross-national studies of this kind. The problems of standardizing age within grade levels, or alternatively controlling for age statistically, have been mentioned already.

Another problem has been the translation of the English standard version of the questionnaire into the national languages. It is often difficult or impossible to find appropriate words and phrases. Identical meaning probably cannot be assured for any of the questions. For all practical purposes, however, comparability seems possible for a limited number of behavioural questions and questions on belief. Elaborations based on clear statistical differences between countries as regards individual variables of this kind may be methodologically acceptable.

Comparisons of trends over time and comparisons of relationships between variables across countries do not require the same kind of rigorous comparability. The relationship between father's occupational status and childrens' involvement in sport may be compared between countries even when direct univariate comparisons of the same variables are impossible. This is the case as long as rather rough comparisons of direction and strength of associations are sufficient.

So far, the experiences from the data collections, computerizing, analyses, and reporting of data have revealed several practical hindrances. Using the teachers to collect the data may be a problem in some countries. Lack of expertise in computerizing, cleaning, and analysis of data may be a problem in other countries. International co-operation on the reporting may turn out to be a slow process.

Based on the experiences so far, however, we are convinced that the philosophy and methods of the school-children study are promising. The project applies a lifestyle approach, frequent international planning meetings and workshops are arranged, and an increasing number of countries are being recruited into the study. In our opinion the project will bring new insight and findings. It is up to the national project groups, to the coordinating centres and to WHO to start a process which will lead to the practical implementation of the results in national health education and health promotion programmes.

The limitations as well as the potential of large-scale cross-national surveys deserve attention. There is a strong need for more qualitative and exploratory approaches as a supplement to the data collections described above. The testing of new questions and of new ways of operationalizing lifestyle and psychosocial aspects of health as well as other methodological innovations has to take place between the main surveys. New developments always imply a risk of failure, and the costs and efforts involved in the main data collections do not allow for such risks to be taken. The large-scale cross-national surveys therefore represent a conservative approach.

Interviews with smaller groups of students may increase the researchers' understanding and interpretations of results, and permit closer examination of the validity and reliability of answers. In some countries a follow-up of the same groups of pupils is planned. Panel data offers improved opportunities to study the processes of lifestyle socialization.

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SMOKING BY SCHOOLCHILDREN IN ELEVEN EUROPEAN COUNTRIES

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The second "Health behaviour in schoolchildren, WHO crossnational survey" can be regarded as lifestyle research (Aarø et al., 1986). Different aspects of the lifestyle related to health are surveyed, such as smoking, alcohol consumption, diet and physical activity. Furthermore psychosocial aspects of health and socio-demographic characteristics are included.

The aim of this paper is to show analyses on smoking by schoolchildren. Prevalences of daily smoking are described. Relationships with other aspects of lifestyle and well-being are presented and discussed.

MATERIAL AND METHODS

Schoolchildren per country were investigated in eleven European countries and one region in Israel during the period of 1986-87. The intention was to have 6 groups of at least 500 respondents by school grade and gender per country. As division by school grade, the last class of elementary school and the second and fourth class of secondary school were selected in most countries. If the school grading system was different, three comparable age groups were selected.

When prevalences of daily smoking were described, the means for 11-12, 13-14 and 15-16 year-olds were calculated per country for reasons of comparability.

Representative samples were drawn from nine countries. The region Wallonia was selected in Belgium, and the Lothian province in Scotland.

Questions on smoking are WHO-standard. Translations of the standard questions in different languages posed problems, but the quality is sufficient for cross-national comparisons of results.

RESULTS

Percentages of daily smokers by country, gender and age are presented in Table 1.

Table 1. Percentages of daily smokers by country, gender and age
(N = 43,735)

	boy			girl		
mean age	11.5	13.5	15.5	11.5	13.5	15.5
Finland	0	9	29	0	6	20
Hungary	0	3	21	0	1	14
Netherlands	1	4	21	0	5	20
Norway	1	6	16	0	6	17
Belgium (Wallonia)	0	4	16	0	3	14
Scotland (Lothian)	0	2	15	0	3	16
Wales	1	5	13	0	7	15
Austria	1	2	12	0	2	13
Switzerland	1	3	10	1	1	12
Spain	1	3	-	0	3	-
Sweden	0	1	9	0	2	11

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The prevalence strongly increases with age. Differences by gender are small.

Countries are rank ordered by daily smoking among boys aged 15.5 years. Percentages are high among boys and girls in Finland. The non-western country Hungary scores high too.

Percentages of weekly smokers and those who ever smoked as well as numbers of cigarettes consumed were calculated too, but these findings were similar to the presented data.

Daily smoking among schoolchildren aged 15.5 years is related to other aspects of lifestyle (see table 2). The relationship with frequency of drunkenness is high, and there are also significant relationships with lower physical activity, poor dietary habits (higher coffee and hamburger consumption and lower frequency of breakfast and lunch), going late to bed, less time spent on homework and more evenings spent with friends. Daily smokers also feel less healthy. The relationships of ever smoking and the explanatory variables among schoolchildren aged 11.5 years are similar but lower.

Table 2. Second order correlation coefficients of the relationships between smoking and explanatory variables (age and gender are kept constant).

	mean age 15.5 daily smoking N = 11,262	mean age 11.5 ever smoking N = 12,068
Frequency of drunkenness	0.37	0.26
Physical activity	-0.06	0.03
Coffee consumption	0.12	0.12
Hamburger consumption	0.09	0.06
Frequency of breakfast	-0.08	-0.05
Frequency of lunch	-0.08	-0.03
Going late to bed	-0.19	-0.15
Time spent on homework	-0.27	-0.04
Evenings spent with friends	0.28	0.13
Feeling healthy	-0.13	-0.01*

* not significant at $p<0.05$

The relationship of daily smoking and frequency of drunkenness among schoolchildren aged 15.5 years was studied in more detail. In Wales the percentage of schoolchildren who have been more than ten times drunk among daily smokers was 56 per cent in boys and 29 per cent in girls! Proportions were a third among boys and girls in Finland, Scotland and Sweden.

DISCUSSION

Smoking is increasing strongly by age among schoolchildren. The smoking epidemic still victimizes youth.

Differences by country shed doubt about the effectiveness of anti-smoking policy. Measures are strongest in Scandinavia, but Finland could be found at the top, Norway in the middle and Sweden at the bottom in the rank order of prevalences. Fortunately, analyses of changes in time of smoking prevalence among schoolchildren suggest a positive effect of the distribution of anti-smoking information (Van Reek et al., 1987).

Daily smoking is related to other aspects of an unhealthy lifestyle among schoolchildren aged 15.5 years. Relationships of ever smoking and unhealthy aspects of lifestyle are similar among schoolchildren aged 11.5 years. It is therefore likely that smoking develops as an integrated part of an unhealthy lifestyle.

Anti-smoking campaigners and policy makers should be aware of the integrated unhealthy lifestyle. If possible smoking and excessive alcohol consumption should be attacked together.

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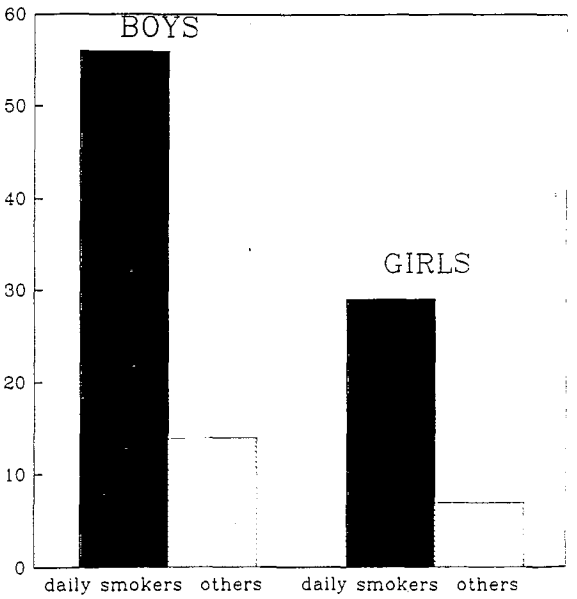
Figure. Percentages of schoolchildren who have been more than ten times drunk by daily smoking in Wales (mean age = 15.5)



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The Effect of Marketing Communication on the Initiation of Juvenile Smoking*

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Many different factors may influence smoking initiation by juveniles: these are incorporated in a model and their importance is considered. Individual factors that are most important are family and peers. Studies fail to demonstrate that advertising has any direct effect on smoking initiation, though this is not surprising as tobacco advertising is a fairly low-involvement activity for all but smokers or people who for some reason are predisposed to smoking. Any effects advertising may have are likely to be only indirect, and relate to the development of schemata and attitudes about smoking. These are likely to be minimal in relation to family and peer influences and will be very difficult to measure.

INTRODUCTION

Smoking behaviour is changing. In the Netherlands the percentage of male smokers decreased from 90 per cent in 1958 to 37 per cent in 1988 (Van Reek, 1983; Stichting Volksgezondheid en Roken, 1989). The percentage of female smokers increased from 28 per cent in 1958 to 42 per cent from 1968–1970, but by 1988 had decreased to 29 per cent. For a number of years, approximately nine per cent of adolescents in the 10–14 age bracket in The Netherlands have smoked, with a higher percentage of teenage girls smoking than of boys (Stichting Volksgezondheid en Roken, 1989). Similar trends are seen in other countries, including the pattern of adolescent smoking.

This paper reviews the literature on the initiation of smoking among young people, with particular emphasis on the impact that advertising has on the onset of smoking by adolescents. As the above statistics indicate, a number of adolescents decide to become smokers, and a number of researchers have looked into those factors that may influence this decision. There are of course many questions to be answered. How do young people decide to become smokers? Is it conscious information-processing or a less conscious adoption of a habit? Which people (parents, teachers, peers) and media (advertising, magazines, television programmes, films) influence this decision? Which schemata do these children have about smokers

*The author wishes to thank Marianne Heuvelmans for her help with the literature search.

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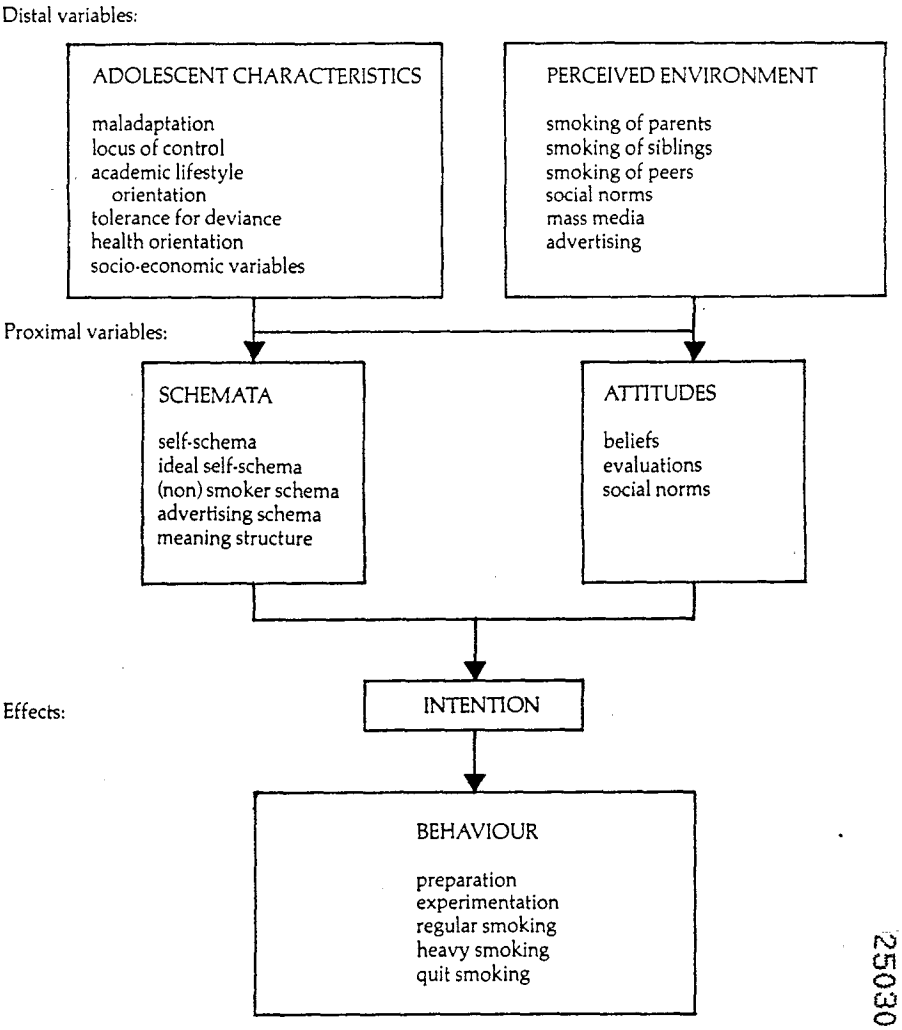
and non-smokers? And what beliefs do they have about smoking and non-smoking? Some answers to these questions can be found in this article.

THE BASIC MODEL

The basic model of the factors influencing the onset of smoking is presented in Figure 1. This model serves as the outline for the discussion in this article. The distal or external variables are adolescent characteristics, such as socio-economic and personality variables; the perceived environment of the home, such as smoking behaviour of parents, siblings and peers; social norms about smoking; and mass media information, including advertising. Proximal or internal variables pertain to perception, evaluation, and the decision processes of adolescents. In this paper these are described as schemata, attitudes and meaning structures.

Figure 1 Basic model of factors relating to the onset of smoking.



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The distal and proximal variables, separately or in conjunction, affect smoking intention and smoking behaviour. As the chart indicates, several types and stages of smoking behaviour can be distinguished, but here we are concerned with the preparatory and experimental stages leading up to regular smoking.

THE DISTAL VARIABLES

Adolescents' characteristics

Relevant socio-economic adolescent characteristics with regard to smoking are age, gender, education, social class and culture. Relevant personality traits include maladaptation, locus of control, academic lifestyle orientation, tolerance for deviance, health orientation, and time preference.

Age

Adolescents from 11–19 years of age are often divided into three age groups: (1) early adolescents of 11–13 years, (2) middle adolescents of 14–16 years, and (3) late adolescents of 17–19 years of age. De Vries and Kok (1987) found that early adolescents, especially girls, perceive more negative immediate effects of smoking, such as dizziness, coughing, and watering eyes. Late adolescents recognize more advantages of smoking, such as sociability, relaxation, and not being nagged.

Gender

In many studies, differences between boys and girls in smoking initiation are reported. Earlier studies (Levitt and Edwards, 1970) showed that more boys than girls smoke. More recent statistics from western countries indicate that more girls now smoke than boys. The trend is perhaps unexpected, for Page and Gold (1983) found that girls are more health-conscious than boys and more obedient than boys to the wishes of parents, doctors and teachers. However, girls mature earlier and, combined with a steady change in social norms about emancipation and smoking, girls now exhibit smoking behaviour similar to boys one or more years older. The introduction of low-tar cigarettes may have contributed to this development (Swan *et al.*, 1989).

Education

Adolescents with a lower level of education, especially boys, are more likely to start smoking (Standhardt, 1985). This may be related to a lifestyle that is not academically orientated and low self-esteem.

Social class

People of a lower social class are more likely to start smoking (Borland and Rudolph, 1975). This is largely related to level of education.

Culture

Castro *et al.* (1987) studied smoking initiation of adolescents from white, black, hispanic, and asian-pacific sub-cultures in the United States of America, and

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Boddewyn (1989) studied the effects of advertising on juvenile smoking initiation in 16 different cultures (white, pacific-asian, black). Many cross-cultural differences were observed in these studies, although Boddewyn concluded that advertising was not a significant influence in any culture.

Personality traits

A number of studies have found that general personality characteristics or disposition are related to the initiation of smoking. Jessor and Jessor (1977) developed the 'problem behaviour theory', in which certain personality variables define a tendency to deviant behaviour and predict an early or premature transition to adult behaviour, such as smoking. Personality variables that have been identified as important in relation to smoking initiation (adapted from Chassin *et al.*, 1984) are maladaptation; locus of control and self-monitoring; the value placed on academic achievement and independence; tolerance for deviance; health orientation; and time preference.

In early studies, personality traits such as anxiety (Walker *et al.*, 1969), depression, helplessness (Pflaum, 1965), self-confidence (Smith, 1969), persuasibility, social disapproval, risk-taking and rebelliousness (Collins *et al.*, 1987; Stewart and Livson, 1966), extraversion and neuroticism (Cherry and Kiernan, 1976) have been shown to correlate with smoking, though not necessarily with the onset of smoking. Kellam *et al.* (1982), in a longitudinal study in the USA, reported that aggressiveness and shyness in first grade male children are predictive of later alcohol, cigarette and marijuana use. Aggressiveness has a positive correlation and shyness a negative correlation with cigarette-smoking ten years later. The personality traits identified in these studies indicate maladaptation or lack of social adjustment to reality. Smoking may begin to compensate for this poor adjustment.

Chassin *et al.* (1985) and Eiser *et al.* (1989a) studied health *locus of control* and health beliefs of smokers and non-smokers. Locus of control is the attribution of causes to observed phenomena, such as illness, health, and physical condition, effects such as success and failure, and the behaviour of oneself and other people (Rotter, 1985). People with a high degree of perceived *internal control* attribute more causes to themselves and perceive more control over their life and environment (personal control). People with a high degree of perceived *external control* attribute more causes to circumstances and perceive less control over their life and environment (chance control). A third locus is *powerful others*, i.e. the belief that other powerful people, e.g., parents, doctors and teachers, affect one's destiny. Internal locus of control has been associated with greater knowledge of disease and ability to quit smoking. Internal control is also related to preparedness to forego immediate gratification for longer-term rewards, such as health in later life. Non-smokers are characterized by more internal control than smokers (Eiser *et al.*, 1989b).

People who believe in chance control are more likely to start and to continue smoking. Their health is perceived as less dependent on their own decisions, and more a matter of genetics or good luck. These people are more likely to be influenced by advertising, because they dissociate smoking from health consequences and prefer immediate smoking gratification rather than later good health. Smoking may then be part of a larger 'unhealthy lifestyle', including drinking coffee and

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alcohol, less exercise, and eating poor food. Advertising may appeal to this 'unhealthy but attractive' lifestyle. No empirical studies exist on the relationship between chance control and smoking.

Early adolescents often have a high degree of *self-monitoring*. Self-monitoring is a personality characteristic related to the effect of the situation on behaviour (Snyder and DeBono, 1985). People who have this high degree of self-monitoring try to be the 'right' person in the right place, regardless of their own attitudes. High-monitoring people learn how they should behave from many sources, perhaps including advertising, and act accordingly. Low-monitoring people normally have a higher attitude-behaviour consistency, and follow their own attitudes regardless of the situation. If smoking is perceived as the right behaviour at certain occasions, high monitoring people are more likely to smoke.

During the transition to adulthood, adolescents are highly self-conscious and insecure about what to say and how to behave. Elkind (1967) introduced the concept of the 'imaginary audience', the belief that others are preoccupied with one's behaviour and appearance. Girls are more self-conscious and susceptible to this 'imaginary audience' than boys. They try to make a good impression on others in order to obtain rewards and to increase their self-confidence. This inclination is similar to a high degree of self-monitoring. Barton *et al.* (1982) observed: 'There are strong theoretical and empirical reasons to believe that early adolescent girls are particularly vulnerable to adopting cigarette smoking as a way of attaining desirable social image.'

Persons with an *academic lifestyle orientation* seek academic achievements and have high educational aspirations. Features of this orientation are the systematic enlargement of one's knowledge through reading, discussion and observation, and a willingness to invest substantial effort over long periods of time without immediate reward. It contains elements of delay of gratification, future-time orientation, aspiration level and need for cognition (Cacioppo and Petty, 1982). Academic lifestyle orientation is opposed to impulsive practices, including smoking. This may explain the lower prevalence of smoking among people with higher levels of education.

Disobedience, acceptance of social disapproval, risk-taking, rebelliousness and non-conformism characterize adolescents with a tolerance for deviance. Such individuals may oppose parental and societal norms. Obedient children are more influenced by parents, whereas disobedient children are more influenced by peers (McAlister *et al.*, 1984). Chassin *et al.* (1984) define a group of adolescents that are very likely to become smokers. These adolescents are deviance-prone (Jessor and Jessor, 1977), unconventional, external in their locus of control, have lower expectations for attaining academic success, and have the desire for accelerated maturity. They live in environments with more smoking models, and they overestimate the extent of smoking by adults and teenagers. As smoking becomes increasingly socially disapproved, smoking as a deviant activity might become more attractive to these adolescents.

Social bonding theory states that adolescents' attachment to aspects of conventional society are important in constraining deviant behaviour. Specifically, beliefs, involvement and commitment to education were found to have the strongest constraining effect (Krohn *et al.*, 1983). Attachment to friends is positively related to

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smoking, while commitment to education is negatively related to smoking initiation.

Adolescents with a high degree of *health orientation* are less likely to start smoking. Health orientation has a number of components (Van der Rijt, 1979), including concern for one's health, concern for one's physical condition, and anxiety about pain and illness. Van der Rijt (1979) finds that health orientation is not related to the initiation of smoking, but to the cessation of experimentation and regular smoking stages.

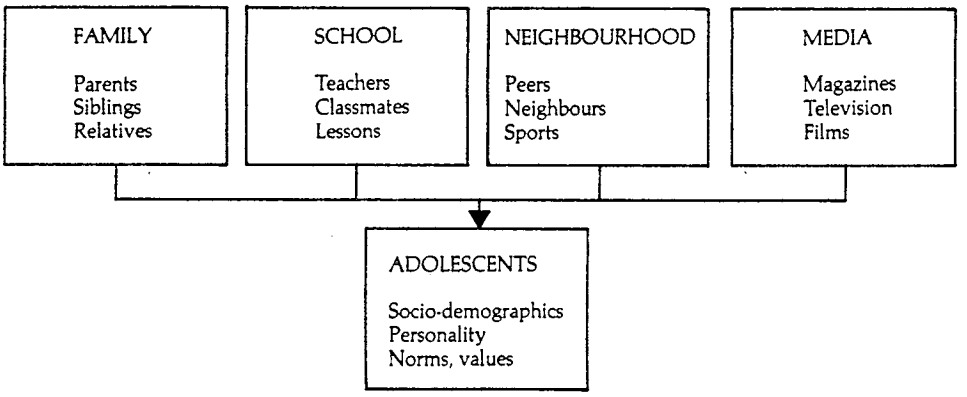
Another important personality characteristic with respect to smoking is *time preference* (Hornik, 1989). People with a high time discount rate are likely to prefer the immediate satisfaction of smoking more than people with a low discount rate. People with a present-time orientation are more likely to start smoking than those with a future-time orientation.

Perceived environment

The real and perceived environment of adolescents consists of the cultural agents that transfer cultural values and norms from one generation to the next, or between members of one generation, in a process called *socialization*. The primary target group of socialization is adolescents between the ages of 11 and 19 years. Each stage of life involves the adolescent in specific social fields in which there are cultural agents who define social tasks and judge the adequacy of their performance in that field. During these stages, in which adolescents undergo social adaptation, they receive information from cultural agents, from their own experience and from external information sources, all of which can influence their behaviour, including smoking behaviour.

Cultural agents comprise the family (parents and siblings), the school (teachers and classmates), the Church, friends and peers, sports instructors, and the mass media, including advertising and anti-smoking campaigns (Figure 2). The influence of cultural agents on adolescent smoking varies greatly. Studies suggest that parental and peer influence are highly significant. There is no persuasive empirical evidence to suggest that the media, including advertising, influence the decision to start

Figure 2 Cultural agents affecting adolescents.



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smoking (Fishbein, 1977; Kelson *et al.*, 1975; McAlister *et al.*, 1979; Mettlin, 1976). However, Gorn and Florsheim (1985) argue that commercials for adult products, such as lipstick and diet drinks, have socialization effects on children. These commercials can influence children's perception of products and brands that are associated with being an adult and are thus perhaps seen as the products and brands they should consume in the future. A similar effect arguably might occur through media portrayals of smoking, including advertising, but also including portrayals of smoking behaviour in films and television programming.

Family influences

Wohlford (1970), Bewley *et al.* (1974), and Chassin *et al.* (1981a) report that there is a relationship between the cigarette smoking of parents and their teenage children. Boys are more likely to smoke if their fathers smoke, and girls if their mothers smoke. The parents seem to act as sex-linked models for their children. In broken families, boys seem to rebel against the parental smoking model by adopting the opposite behaviour (negative identification). Wohlford's (1970) mother and daughter smoking patterns were enigmatic. Van Reek *et al.* (1985) also perceived an effect of parental smoking on the smoking behaviour of children. Eiser *et al.* (1989b) concluded, after studying 10,000 adolescents, that parental opposition to smoking is a negative predictor of adolescent smoking. If parents do not object, it is more likely that adolescents start or continue to smoke.

Van der Rijt (1979) finds that more adolescents smoke if their parents do so. An even stronger effect occurs if smoking parents forbid their children to smoke. Smoking then becomes attractive as 'forbidden fruit' and 'for adults only'. Children react to this parental example and prohibition by smoking more. Brehm's (1966) reactance theory predicts that behavioural options become more attractive by prohibiting or blocking them. This is not only in the case of smoking, but may also affect drinking, drug use, clothes, and hairstyles.

If parents stop smoking, this may reduce their children's experimentation with smoking. Anti-smoking campaigns may thus not have a direct effect on adolescents, but rather an indirect effect through the response of adults to such campaigns.

Peer influences

The literature makes clear that peer influence, especially from peers of the same sex, is the pre-eminent factor in the onset of smoking experimentation and the maintenance of smoking (Bewley *et al.*, 1974; Biglan *et al.*, 1984; Friedman *et al.*, 1985; Hirschman *et al.*, 1984; Levitt and Edwards, 1970; McCaul *et al.*, 1982; Van Reek *et al.*, 1985). Peer influence increases with age as parental influence declines (Krosnick and Judd, 1982). Adolescents smoke when they are in the presence of other adolescent smokers. Smoking by a 'best friend' is a good predictor of smoking initiation (Levitt and Edwards, 1970). Most adolescents receive cigarettes from friends (57 per cent) and acquaintances (20 per cent) than from siblings and parents (Baugh *et al.*, 1982; Friedman *et al.*, 1985). Smokers tend to select other smokers as friends in higher proportions than non-smokers do other non-smokers. Such friendships provide social support for smoking (Fisher and Bauman, 1988). Covington and Omelich (1988) assert that even in the absence of peers, beliefs about peer approval and pressure

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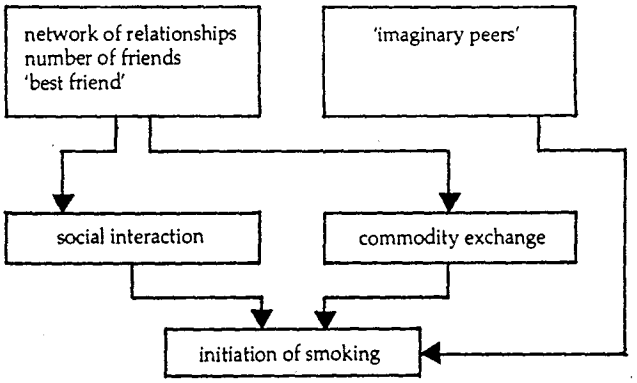
might be present and influence smoking behaviour.

Van der Rijt (1979) studied the interaction and exchange processes in peer groups, and Eiser and Van der Pligt (1984) explained the process of peer group influence in more detail. One of the strongest predictors of later smoking is the ability to create or to join social networks comprised predominantly of smokers or of non-smokers (Newcomb *et al.*, 1989). In a smoker network more opportunities to smoke exist, more cigarettes are offered by others, and more acceptance of smoking behaviour can be found. Peer groups do not necessarily exert pressure, but they do provide social approval. In peer groups with leaders that smoke, more adolescents start smoking than in peer groups in which the leaders do not smoke. Cigarettes act as an exchange commodity in peer groups. Adolescents with a higher status in the group receive more cigarettes from other group members than adolescents with a lower status.

More recent anti-smoking campaigns try to limit peer influence by stressing the ability to resist social pressure and to say 'No' when a cigarette is offered (Best *et al.*, 1984; Murray *et al.*, 1984), and by derogating the positive smoker schema that may develop from peers and other sources, including advertising. Same-age peer leaders seem to be a necessary condition in order for such campaigns to be successful (Murray *et al.*, 1984). In most studies the peer group is seen as a source of persuasion, to which the weaker and more gullible succumb and the stronger and more intelligent resist. However, as smoking is now a minority activity, the causal influence is less clear, and peer-group effects might thus be against, rather than in favour of, smoking (Figure 3).

Figure 3 Peer influence on the initiation of smoking.



As compared with peer influence, advertising effects seem to be unimportant, although advertising may reinforce and justify smoking experimentation by serving as a reminder of peer influence and reinforcing the sociable character of smoking.

PROXIMAL VARIABLES

The above discussion explains the external variables that may influence a young

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person to experiment with cigarettes or to begin smoking. These variables may result in the formation of opinions, beliefs, meanings, attitudes, values, schemata and intentions with regard to smoking. These opinions, beliefs and so forth are described in Figure 1 as proximal variables.

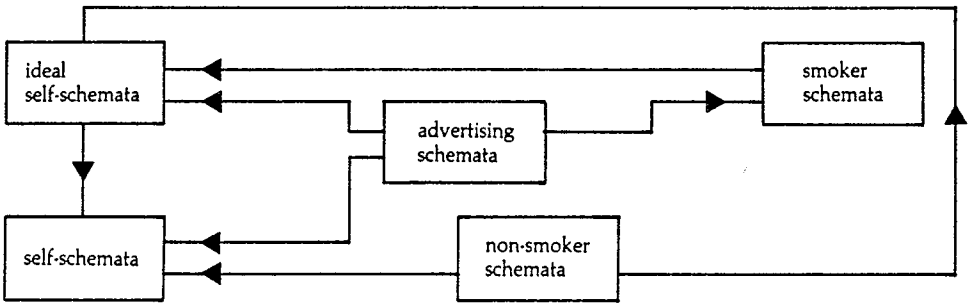
The proximal variables develop at a more or less elaborated and conscious level. Three basic models have been described for this development process, and they may be distinguished by the level of conscious processing or involvement that the model presumes (Poiesz, 1989). These are the schemata model, the reasoned action model, and the meaning structure model. These models do not contradict each other. Although the schemata model is more holistic, elements of it can often be placed as beliefs in the reasoned action model or as attributes, consequences and values in the meaning structure model.

Schemata model

At a less conscious level, the *schemata model* is the most appropriate to describe the onset of smoking (Beijk and Van Raaij, 1989). A schema is a more or less stable network of associations and connotations around a behaviour pattern such as smoking or non-smoking. An image is an example of a schema. It is assumed that people try to realize an ideal self-schema by matching their self-schema to a desirable other schema.

According to the schemata model, people develop schemata or images about the typical smoker or the typical non-smoker, based on information from many sources. McKennell and Bynner (1969) and Burton *et al.* (1989) distinguish (1) *self-schemata*, containing qualities the subject ascribes to him or herself; (2) *ideal self-schemata*, with qualities the subject would like to possess; (3) *smoker schemata*, with qualities ascribed to smokers in general; (4) *non-smoker schemata*, with qualities ascribed to non-smokers; and (5) *advertising schemata*, with qualities ascribed to models in tobacco advertising in magazines and on billboards (Figure 4).

Figure 4 Possible relationships among schemata.



Early adolescence is the developmental stage of maximum conformity to group norms. For girls, it peaks at 12 years and for boys at 15 years of age (Iscoe, Williams and Harvey, 1963). It is the period of low self-esteem, and during this period adolescents may adopt smoking if this is seen, perhaps through self-monitoring, as enhancing their self-schema and self-esteem and creating the impression that they

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want to make on others. Leventhal and Cleary (1980) suggest that during the experimentation stage of smoking initiation, people perceive and evaluate the schema associated with smoking. If adolescents perceive an attractive and socially successful smoker schema, they might begin to smoke in order to attain this attractive schema, both in their own eyes and in the eyes of their peers. Advertisements using such models as the Barclay, Camel or Marlboro man (Burton *et al.*, 1989), might help to create and reinforce positive smoker schemata in adolescents. Advertising may thus have no direct influence on the initiation of smoking, but it may provide smoker schemata that can be used in building one's self-schema (Table 1).

Table 1 *Adolescents' characteristics over time*

	ADOLESCENCE		
	EARLY	MIDDLE	LATE
self-consciousness (boys)	high	high	medium
self-consciousness (girls)	high	high	high
self-schema	unstable	unstable	more stable
self-esteem (boys)	low	medium	high
self-esteem (girls)	low	low	medium
self-monitoring	high	high	medium
insecurity	high	high	medium
conformity to peers	high	high	medium

Grube *et al.* (1984) found that the self-schemata of potential and actual smokers were more similar to smokers in general than the self-schemata of non-smokers. Chassin *et al.* (1981b) found that non-smokers who had actual and ideal self-schemata close to the smoker schema were more likely to intend to smoke than non-smokers with schemata different from the smoker schema. Vitz and Johnston (1965) found positive correlations between smokers' masculine self-schemata and advertising schemata relating to masculinity.

People with a high degree of self-monitoring (Snyder and DeBono, 1985) are especially susceptible to creating an attractive self-schema or image to present to others. Norman and Tedeschi (1989) use the concepts of impression management or self-presentation. Adolescents desire to attain particular identities in social interactions in order to achieve certain rewards or to avoid punishment. Particularly during the transition to adulthood, impression management may hide basic insecurity in social situations. An individual who smokes may be perceived among adolescents as mature or sophisticated, as popular and interesting, and generally as 'cool'. If so, the desire to be 'cool' might lead a young person to decide to begin smoking.

Which characteristics of the smoker schema are prevalent among adolescents? McKennell and Bynner (1969) found three groups of smoker traits applicable to both males and females: (1) educational failure, including sloppiness and low school achievements; (2) toughness, timidity (shy, meek, quiet); and (3) precocity, i.e. acting and appearing grown-up. All subjects perceived precocity as a positive smoker's asset. Smokers themselves see toughness as another positive asset. Educational failure

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is generally perceived as a social liability of smoking. Chassin *et al.* (1981b) extend this work and report a link between this schema and smoking intention. Non-smoking adolescents with a self-schema similar to the smoker schema are more likely to start smoking in the future. These authors suggest that adolescents may initiate smoking both as a way of achieving consistency with their actual self-schema and as a way of attaining selected characteristics to which they aspire.

Barton *et al.* (1982) asked subjects to rate photographs of smokers and non-smokers. Smokers were perceived as having a number of negative traits: less healthy (especially for males), less wise, less good, less obedient, less likely to do well at school, trying to act older, and less desirable as friends. Positive traits of smokers were also given: tougher, wanting to be with the group more, drinking more, and more interested in the opposite sex. These differences were stronger for sixth graders (10–11 years of age) than for tenth graders (14–15 years of age). Barton *et al.* (1982) found that for sixth grade girls, smoking intentions were related to more aspects of the smoker schema than for boys. By the tenth grade this tendency diminished. Interest in the opposite sex and drinking alcohol are the only aspects of the smoker schema that are significant at this age.

The smoker schema is thus highly ambivalent for adolescents in that it contains both negative and positive traits. Some advertising tends to stress the positive traits: toughness, sociability and interest in the opposite sex. Although subjects do not consciously process this symbolic advertising information, it may have an effect on the smoker schema and their self-schema. Although they do not want to admit that they are influenced by advertising (it may be socially undesirable to be influenced), advertising messages portraying an attractive smoker schema may nevertheless have an impact on these perceptions and thus on smoking experimentation.

Aitken *et al.* (1985, 1987) studied children's awareness of cigarette advertising and brand imagery. This perception of advertising brand imagery develops over the ages of 10–14 years. For example, when presented with an advertisement for Kim cigarettes (which showed a cigarette pack and cocktail glasses), ten-year-olds said that people who liked this advertisement would smoke and drink. Most of the 14-year-olds go beyond what is explicitly shown and perceive Kim as young, feminine, sociable, trendy and sporty. This indicates that advertising suggests characteristics that go beyond what is actually shown in the advertisement. Adolescents make inferences about smoker schema based on advertising images.

Aitken *et al.* (1987) found that older adolescents and adolescents who smoke or intend to smoke recognize more cigarette advertisements. Adolescents who smoke are able to solve 'puzzle' advertisements (with brand names absent or scrambled) such as those for Benson & Hedges, Marlboro and Silk Cut. The study found no differences between smokers and non-smokers in their ability to match facets of brand personality with the appropriate advertisements, e.g., the tough cowboy = Marlboro, and travelling business executive = Peter Stuyvesant. Although in the Aitken *et al.* (1987) study a relationship was observed between smoking and advertisement recognition, this does not mean that advertising induced or reinforced smoking.

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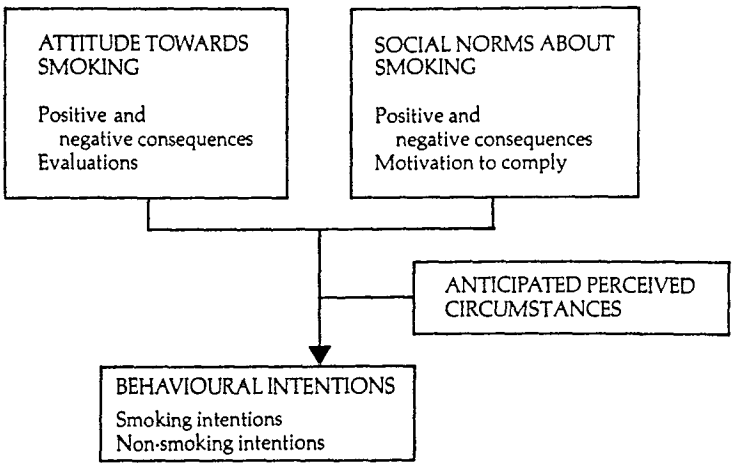
Reasoned action model

At the conscious level, the *reasoned action model* of Fishbein and Ajzen (1975) is probably the most appropriate and accurate model to illustrate the relationship between smoking attitude and behaviour (Figure 5).

Figure 5 Reasoned action model (Fishbein and Ajzen, 1975).



According to this model, behaviours and behavioural intentions are governed by personal attitudes and social norms. Fishbein (1977) and Chassin *et al.* (1981a) applied the reasoned action model to smoking behaviour.

Attitudes toward smoking are based on beliefs about the behaviour and the consequences of that behaviour. The beliefs are evaluated in terms of favourable-unfavourable. If b_i is the i-th belief and a_i is the evaluation of this belief, the attitude toward smoking A_{act} is:

$$A_{act} = b_i \bigstar a_i.$$

Social norms are related to relevant agents (peers, parents, teachers, idols) and also to perceptions, such as the perceived prevalence of smoking. Smokers tend to estimate the proportion of smokers to be higher than non-smokers. The social norms consist of normative beliefs and the motivation to comply with these normative beliefs. If nb_i is the i-th normative belief and mc_i is the motivation to comply, the social norm is:

$$SN = nb_i \bigstar mc_i$$

Attitude A_{act} and social norm (SN) determine behavioural intention (BI) and thus smoking or non-smoking behaviour (B):

$$B \sim BI = w_1 \bigstar A_{act} + w_2 \bigstar SN$$

While the schemata model and the distal personality variables (Jessor and Jessor, 1977) predict smoking experimentation best, the reasoned action model is more appropriate for predicting the transition from experimentation to regular smoking.

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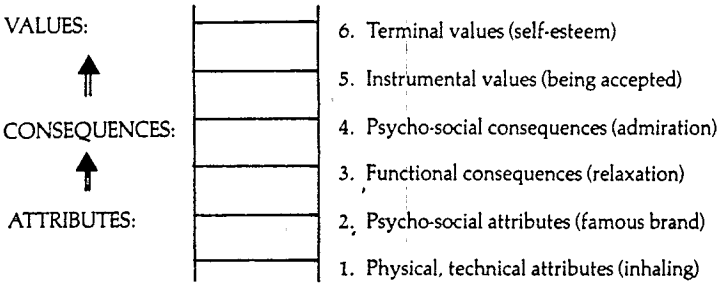
Direct personal experience with smoking leads to the formation of more stable beliefs and evaluations (Regan and Fazio, 1977) and to more experience with social norms about smoking. In such a situation the reasoned action model is a good predictor of smoking intentions and smoking behaviour. Information-based interventions will be more effective at this stage. Informative advertising about low-tar or filter cigarettes aimed at this group is likely to be effective.

The reasoned action model is also more appropriate in situations where tobacco commercials and anti-smoking information are simultaneously available. Pro- and anti-information at the same time increases the awareness of the health consequences of smoking, and leads to a more informed choice of smoking or non-smoking behaviour. Without anti-information, consumers might make a less informed choice and react more positively to the smoker schema in advertisements (Teel *et al.*, 1979).

Meaning structure model

At the most elaborate level, the *meaning structure model* (Reynolds and Gutman, 1984) can be employed (Figure 6). Attributes, consequences and values are distinguished and placed in a certain order ('ladder'). Physical smoking attributes are giving and receiving cigarettes and inhaling smoke. A psycho-social attribute is smoking a famous brand. Functional and dysfunctional consequences include relaxation and health damage. The consequences become important if they refer to values. An instrumental value is sociability and affiliation with others, and it is pursued in order to attain a terminal value, such as masculinity and self-esteem.

Figure 6 Meaning structure model of smoking behaviour.



There is scant literature about the use of meaning structure analysis in the study of smoking initiation. However, it is a fruitful model to structure the knowledge and meanings attached to smoking. Experimental smokers might have a global meaning structure. Adolescents may pursue smoking not so much as a behaviour, but as a means to realize consequences and to express values.

SMOKING AND NON-SMOKING BEHAVIOUR

The distal and proximal variables will combine to influence behaviour, as indicated

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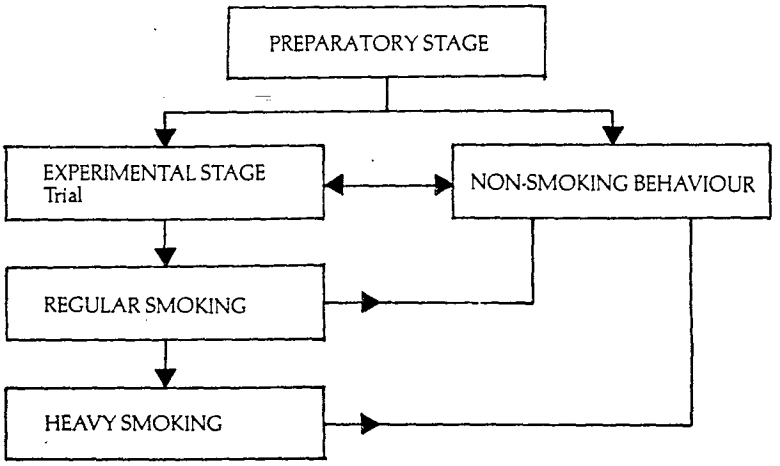
in Figure 1. Hirschman and Leventhal (1989) describe the stages of behaviour concerning smoking as follows:

1. the *preparatory stage*, during which attitudes towards smoking and schemata of self-as-smoker are formed and modified;
2. the *experimental smoking stage*, during which trial with cigarettes and pleasant, neutral or aversive initial experiences with cigarettes confirm or disprove expectations;
3. the *regular smoking stage*, during which smoking at certain times and in certain situations becomes established as a behavioural pattern and is maintained as a habit;
4. the *heavy smoking stage*, characterized by heavy daily smoking, nicotine craving, and difficulty upon quitting;
5. the *quitters*, regular or heavy smokers that try to quit their habit.

In this article the focus is on the onset of smoking; heavy smoking and quitting are not discussed any further (Figure 7).

Figure 7 Stages of smoking behaviour.



1. During the *preparatory stage*, children's attitudes toward smoking and a schemata of self-as-smoker are formed and modified. During the preparatory stage, early childhood experiences seem to influence future smoking behaviour. Children may anticipate their future behaviour and learn smoking characteristics or they may learn not to smoke. Parents form a first model of 'adult behaviour' of smoking. Yasin (1973) reports that children who grow up with smoking parents and older siblings have a higher probability to start smoking themselves at a higher age. Family examples provide the vicarious experiences that allow for the development of attitudes about smoker schemata, of what smoking is like, and why it is done. Children learn at this stage by observing and imitating their parents, especially their mother (Baric and Fisher, 1979). Smoking family members provide the environment and the materials for trying the first cigarette. Although some children smoke an occasional cigarette or have a few puffs before the age of nine, it is essentially still

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the pre-smoking period. Almost 90 per cent of all adolescents try at least one cigarette. Much first-time smoking occurs after the transition from elementary school to junior high school. Advertising may have an effect during this stage on the smoker schema that children form, as well as on some beliefs about smoking, such as the health associations or possible health consequences.

2. The *experimental smoking stage* is the stage of learning to light a cigarette, to inhale correctly, and experiencing the different effects under different conditions. Hirschman *et al.* (1984) give a detailed account of the paths which adolescents follow through these stages. Most respondents reported aversive experiences while trying their first cigarette: bad taste, coughing, bad smell, dizziness, sickness, burning throat, headache and nausea. Two-thirds of the adolescents see these experiences as symptoms of the adverse health consequences of smoking and do not try another cigarette. Others feel that they can overcome these symptoms, just as they overcame the aversive experience of their first glass of beer.

Parents and peers play an important role during this period. Smoking parents may serve as a model for their children, and they also provide opportunities for experimentation. It is likely that there are cigarettes available in the home to try. Parents may admonish their children not to smoke, and during early adolescence children may accept this parental advice. At middle adolescence a parental prohibition may have adverse effects, especially if parents smoke themselves. The smoking schema may also develop meanings usually attached to the consumption of alcohol and sexual behaviour. Social, psychological, primary and secondary reinforcements take place during this stage. The experimental stage may last for one year or more.

3. After up to two years of experimenting, 85 per cent of those who experiment with four or more cigarettes become *regular smokers*. During the regular smoking stage, advertising may help to maintain brand loyalty and convert smokers to a particular brand.

The process by which young people become regular smokers is poorly understood. If smoking is associated with pleasurable activities (smoking after work; smoking after a good dinner; smoking during recreation), it may become reinforcing by itself. Social contingencies probably remain important.

In a number of studies (Van der Wal, 1983) a relationship between drinking and smoking has been established. Drinking coffee and alcohol usually starts at a lower age than smoking (Hirschman *et al.*, 1984), and new smokers appear to come from the category of alcohol drinkers. Among middle adolescents, heavy drinkers are more likely to become heavy smokers as well. For late adolescents no relationship between smoking and drinking can be found.

CONCLUSIONS: EFFECTS OF MARKETING COMMUNICATION

In the foregoing discussion the factors influencing the initiation of juvenile smoking were described. The effects of advertising on the initiation of smoking were mentioned in several places. A more systematic account of the effects of advertising, sales promotion, in-store displays, sponsorship and other marketing communication

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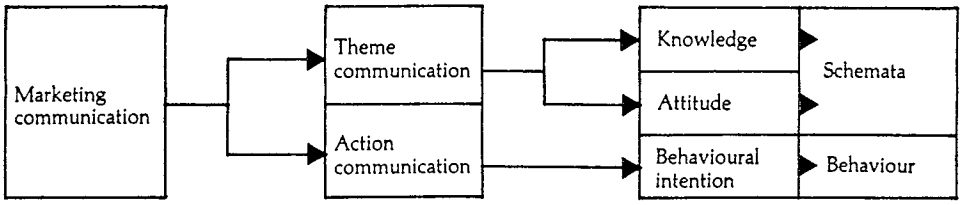
instruments on smoking initiation by adolescents will now be given.

Marketing communications may be divided into theme-orientated instruments to change the knowledge (awareness, beliefs) and attitudes (affect, evaluations) of consumers, and action-orientated instruments to change the behaviour of consumers (Figure 8). Advertising in mass media, outdoor and cinema advertising and sponsorship are mainly theme-orientated. Sales promotion, in-store displays, direct mail and direct-response advertising are mainly action-orientated. With theme-orientated instruments, an attractive smoker and brand schema can be created and beliefs and evaluations can be formed and changed. Action-orientated instruments generate and facilitate purchase behaviour (Floor and Van Raaij, 1989).

Figure 8 Effects of marketing communication.



Advertising as theme communication affects knowledge and attitudes, and thus smoker and brand schemata and beliefs. In the literature, high and low involvement situations are distinguished. Involvement is related to the product, person and/or situation. If a product is very important for a consumer, more information processing about product and brand choice and more attention to advertising may be expected. This is the high involvement situation. In the low involvement situation, less information processing and attention to advertising may be expected. Advertising strategies and contents differ, depending on the involvement situation of the target group.

Advertising contents have changed over time. In the period before 1955 health claims constituted a considerable proportion of the information disseminated through cigarette advertising. Some American brands, e.g., Camel, Kent or Old Gold, claimed less throat irritation than other brands; Kent and Lucky Strike claimed protection from nicotine and tar. Camel even presented brand endorsements by medical personnel. In the presence of such advertising it was almost impossible for a potential smoker to ignore or forget that cigarette smoking leads to throat irritation, coughs and other symptoms.

After 1955 health claims were seldom made; after 1970 only the obligatory standard health warning and tar/nicotine figures were presented. Between 1955 and 1970 there was a paucity of commercial information relating to health. The individual and social pleasures of smoking were the most often-used claims in advertising. The increase in smoking during this period could be explained by the absence of health as an issue in commercial advertising (Calfee, 1986).

Cigarettes are, for most adolescents and adults in most situations, a low involvement product. The advertising confrontation is not actively sought, limited attention is paid to the advertisement, and limited effects may be expected from one

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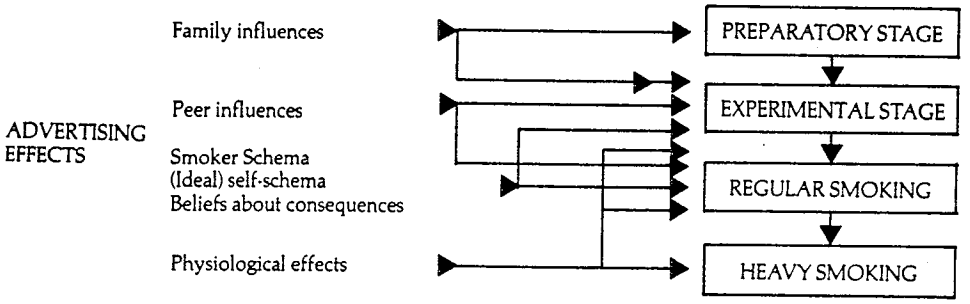
confrontation. With repetition over time, some effect of the advertising campaign might be expected. However, low involvement advertising effects can arise only in the long run, and after many advertising confrontations.

In specific situations, such as at the onset of smoking or with brand switching, involvement with cigarettes is temporarily higher. In situations of *high involvement*, the arguments and claims in advertisements will be carefully read and processed. This information may consist of product attributes (type of filter, length and quality of cigarettes), consequences (pleasure, relaxation, health) and schemata information about the type of smoker (rugged and tough, sophisticated, sociable, cosmopolitan, feminine). Under high involvement conditions, consumers form beliefs and develop pro and con arguments in reaction to the advertising. The advertisement itself may elicit pro-smoking arguments, the health warning counter-smoking arguments. Consumers are thought to process the pros and cons of smoking in general and to arrive at an informed decision.

Aitken *et al.* (1985) find that children recognize cigarette brand imagery. Smokers were nearly twice as likely to correctly identify cigarette advertisements and slogans (Chapman and Fitzgerald, 1982). But in the studies reviewed no indication can be found that advertising has a significant effect on the initiation of smoking. In a similar way, alcohol advertising has no effect on overall drinking (Smart, 1988). The main agents influencing smoking among adolescents are the parents and older siblings during the preparatory and experimentation stages and peers during the experimentation and regular smoking stages (Boddewyn, 1989). Teachers and other adults have a minor influence. The social networks of adolescents are the major impetus to smoking. Advertising might play a role by providing smoker schemata that reinforce smoking, and advertising may raise the issue of the health consequences of smoking (Calfee, 1986) (Figure 9). These schemata and the health issue may become a part of one's thinking and conversation with others. Advertising thus has no direct influence but might have an indirect one, through other people, as reinforcement and justification of other people's influence. This reinforcing effect is not demonstrated in the published literature, but it cannot be entirely ruled out as a possibility.

Figure 9 Factors affecting smoking stages.



Cross-national studies on smoking indicate that the prevalence of smoking is high in countries with an almost complete ban on tobacco advertising (Australia, Canada,

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Norway and Sweden) and low in countries with a more liberal advertising climate (Argentina, Hong Kong, Japan, Kenya and The Philippines) (Boddewyn, 1989)). This indicates that any reinforcing and justifying effect of advertising does not cause adolescents to start smoking.

Thematic advertising in the mass media, cinemas and out-of-doors are the most common. A new trend in marketing communication is *thematic promotion*, i.e. sales promotion without a direct selling objective. In the Netherlands, the cigarette brand Caballero organizes the 'Trip around the World', Camel has the 'Camel Trophy', and the roll-your-own brand Brandaris organizes sailing contests. These thematic promotions create awareness of the brand as well as positive, sporting connotations with that brand. *Sport sponsorship* may have the same objective; brand awareness and a sporting connotation. These sporting events receive extensive media coverage, especially on television. In the Netherlands, each cigarette brand now tends to be identified with a particular sport: Marlboro with automobile racing, Pall Mall with sailing and surfing, Brandaris with sailing, Benson & Hedges with speedboat racing, and Lucky Strike with side-car racing. Ledwith (1984) reported a greater awareness of cigarette brands that had been frequently associated with sponsored sporting events on television, but no causal links have been shown between sponsorship and adolescent smoking initiation behaviour.

Another development in the last decade is the use of brand names for other products. 'Caballero' is not only a cigarette but also a brand of sherry. 'Marlboro' is the name of a brand of fashion clothing. The name 'Drum' is also used for tents, rucksacks and other outdoor articles, In another context, Peter Stuyvesant has an art collection. The expressive values of such products may be added to the brand schema. However, if they are, there is no literature on any effects of *brand extension* on the initiation of smoking.

In-store displays, especially at the check-out counter, attract attention to a specific brand. It is a way to facilitate purchase. No empirical studies exist on the effects of in-store displays on the initiation of adolescent smoking. It is likely that in-store displays, as a reminder at the point of purchase, have an effect on the purchase behaviour of smokers, though not on adolescents to become smokers.

TECHNICAL CONCLUSIONS

Most of the studies reviewed in this article are based on cross-sectional data collection. A cross-section is a survey at one point in time, and may show correlational relationships between variables, but not causal relationships. The value of a cross-sectional analysis is that it allows hypotheses about the relationship between variables, but one cannot conclude from a cross-section which factors cause smoking or which factors may be consequences of smoking. The correlations may be spurious, or the factors may both be caused by a third factor. Many factors change with the development of adolescents, e.g., changes in smoking and media usage may coincide. One factor is not the cause of the other.

Some studies (Chassin *et al.*, 1984; Collins *et al.*, 1987) have a longitudinal design, i.e. adolescents are followed over time and measures are taken on at least two

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occasions t_1 and t_2. Even then, causal relationships cannot be established, although it becomes more clear which factors at time t_1 precede smoking at t_2. These effects are, however, often confounded with unmeasured factors and trends. Here too, spurious correlations are often reported as causal (Van Raaij, 1984).

The best research design would be the experimental approach, in which all factors except the experimental ones are kept constant. A longitudinal experimental approach is needed to establish the effects of advertising on smoking initiation. The control group should then be exposed to the 'normal' level of tobacco advertising, whereas the experimental group should not be confronted with advertising stimuli for a period of two years (the experimental stage). This is, however, impossible both for practical reasons and due to ethical constraints (Moschis, 1989).

A quasi-longitudinal experimental design can be found in cross-national comparisons between countries with severe tobacco advertising restrictions and those with almost no restrictions (Boddewyn, 1989). In these comparisons one should account for cultural and economic differences between countries that may provide alternative explanations, other than advertising, for the differences in the initiation of smoking (Van Raaij, 1978).

Along with the experimental design and research method, the data collection method deserves attention. In most studies self-completed questionnaires were used. Adolescents had to remember the factors that were important at the onset of smoking. Factors may be easily forgotten. Socially less desirable factors may not be reported. The questionnaires were often completed in a class setting, with a lack of privacy and insufficient time for reporting on complex situations and behaviours. Personal interviews (Boddewyn, 1989) are better for uncovering the motivation and behaviour of adolescents.

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Viewpoint

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Smoking and attitudes towards smoking in Norway

Tiddskr Nor Lægeforen [1] 1990; 110: 2260-1

A great deal of publicity has been devoted to the question of smoking prohibitions on flights in Norway and the impression has been given that Norway is far in advance of other countries as far as the regulation and reduction of smoking is concerned. According to a recent international comparison, Norway stands, in reality, in last place compared with other Western countries. Our own data, providing a ten year perspective, are also presented, showing how attitudes to smoking have dramatically altered, whilst percentages for daily smokers have, broadly speaking, remained unchanged. Proposals are put forward on how the environment can be made more smoke-free and on how passive smoking can be prevented.

In the Journal (1), under a short article on Smoking prohibitions "over there", it is stated that the USA is expecting to introduce smoking prohibitions on all domestic flights. The commentary on this points out that "in Norway, a smoking ban was introduced on all domestic flights long ago".

In the USA, smoking prohibitions were introduced many years ago on all flights under 90 minutes duration. Braathen's SAFE soon followed suit in introducing smoking prohibitions on all domestic flight routes in Norway. SAS came up somewhat later with an announcement stating that it was now forbidden to smoke cigars and pipes (something which has always been banned by most airlines). Not until recently did SAS introduced smoking prohibitions on domestic routes in Norway.

Only one direct domestic route in Norway is longer than 90 minutes (Oslo-Tromsø, barely two hours). Most domestic routes within the USA last more than 90 minutes. All domestic routes, including those which are over six hours, have been smoke-free since 25/2 1990!

The legislation and regulation of smoking which has been implemented in aircraft is a reflection of the work put in to achieve smoke-free conditions within other areas also.

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[1] Journal of the Norwegian Medical Association

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So what is the situation with regard to smoking generally in Norway? In 1979, 38% of the Norwegian adult population were daily smokers, in 1989 36% (The National Tobacco Damage Council)! On the other hand, our impression is that attitudes to smoking have changed positively within the last ten years. We have therefore studied the way in which smoking habits and attitudes have changed during this period at a psychiatric hospital (Gotestam KO, Smoking and eating habits amongst medical staff. Thesis for Young Researchers, 1988).

Own study

The study was carried out in the spring of 1988. 92 employees at Østmarka hospital (26 men, 66 women, average age 33.7 years, variance 19-51) completed a comprehensive questionnaire on eating, smoking and drinking habits. In addition, staff had been questioned in the spring of 1979 and 1980 (KG Gotestam) about their attitudes and habits with regard to smoking and this same was repeated in the spring of 1989 (KO Gotestam). The questionnaires, which also contained a written instruction, were issued to ward nurses who distributed and collected the questionnaires. All data collections took place in the spring (during the period February-April). The questions which are present from all four points in time concern the incidence of daily smokers, the desire for smoke-free premises and the extent to which smoking is an environmental problem. The results show a major change in attitudes but, broadly speaking, no change in the incidence of daily smokers (Table 1). Our data follow the same trend as the incidence of daily smokers in the population elsewhere (The National Tobacco Damage Council).

Discussion

The new Smoking Act which was introduced in Norway from July 1988 is a good law. The problem is that it has virtually not yet been implemented and that, in any event, we have not so far seen any effect of it.

What is clear, however, is a dramatic change of attitude with a more negative attitude to smoking and a more positive attitude to regulation and reduction of smoking. This might be an effect of the anti-smoking campaign which has been pursued in recent years.

It is well-known that attitudes and behaviour do not always follow one another (2). Although it is clear that attitudes can affect behaviour, most evidence suggests that behaviour affects attitudes to an even greater degree (3). The discrepancy between attitude and behaviour can be seen every year there is an election and the discrepancy between the opinion measurements and the election results are clear. The same experience of the effect of public information campaigns upon attitudes but a lack of effect upon behaviour has been acquired with regard to both AIDS-prevention (4) and car seatbelt usage (5).

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To suggest that the USA is now finally following Norway's fine initiative in terms of a reduction of smoking would appear to be a little excessive, at a time when a claim that Norway is amongst the last in a race of Western countries in terms of reduction and regulation of smoking would probably be closer to the truth.

The Tobacco Damage Council has long spoken of Norway being far ahead in the reduction of smoking and that other countries are now taking after Norway. This is to erect smokescreens around the truth.

In a recent report by Pierce (6), the prevalence of smokers and the reduction in smoking has been studied for a number of different countries. It can be seen, with all desirable clarity, that Norway, compared with, amongst others, the USA, England and Sweden, is in last place, both in terms of prevalence and in terms of reduction in prevalence in the period 1977-87. Furthermore, prevalence has even increased amongst women! (Table 2).

Some of the figures can perhaps be explained by the fact that Norway may be in a somewhat later development phase with regard to the increase in the incidence of smoking amongst women. However, such an explanation provides no good reason for talking about things being so good, in that we have such a low percentage of smokers and the reduction has been so large. Fortunately, there are not many countries which are taking after Norway, as that would be a serious backward step.

The Norwegian Medical Association which, in its long term programme, envisages a smoke-free Norway in the year 2000, should invest more in an initiative which might make this possible, above all by setting a good example with smoke-free enivronments at medical institutions, interest and advice concerning patients' smoking habits etc. An action plan for a smoke-free Norway in the year 2000, in which the Norwegian Medical Association, amongst others, is involved (7), should be realized more speedily and in greater detail. Recently, an editorial in the Journal has pointed to the necessity of going further (8). Previously, there has been some bragging about the results in_this country, but it now nevertheless appears as if there is some awareness that the action plan has has not produced any return, in any event not in relation to some other countries against which we are used to comparing ourselves. Indeed, we are now in a very difficult situation, with a smoking incidence level which has not fallen in the last ten years, and our own example indicates that, in hospitals, the incidence of smoking might even be greater than in the population at large!

Work on the reduction of smoking should be continued on a targeted basis, to obtain completely smoke-free medical and educational establishments, public premises such as offices, institutions, concert halls and theatres, plus, not least, hotels and restaurants (7). In addition, the risk of passive smoking should be reduced to zero and all aircraft should be smoke-free.

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Table 1 The percentage of daily smokers and the percentage of positive answers to the various questions at four different points in time amongst staff at Østmarka hospital. The results are calculated as a percent of all respondents, i.e. both smokers and non-smokers

Question	1979 n=100	1980 n=100	1988 n=92	1989 n=52
Daily smokers	43	43	45	48
Smoking is an environmental problem at my place of work (yes-answer)	32	30	60	57
There is a need for better smoke-free rooms in the hospital (yes-answer)	40	45	86	66
Percentage of daily smokers in Norway (National Tobacco Damage Council)	38	36	38	36

Table 2 Reduction in prevalence of smoking men and women over 20 years of age in the period 1977-87, as well as prevalence at the end of the period (6)

	Men		Women	
Country	% reduction	Prevalence	% reduction	Prevalence
USA	22.5	31.7	14.6	26.8
England[1]	23.9	35.0	18.4	31.0
Sweden	25.0	24.0	12.9	27.0
Norway	8.0	41.3	+12.0	33.3

[1] For the period 1976-86

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8.* Bajartveit K, Thurmer H, Nylenna M. The tobacco epidemic can be stopped! Tidsskr. Nor Lægeforen [1] 1990; 110: 16-8.

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[1] Journal of the Norwegian Medical Association
[2] The Norwegian Athletics Association
[3] The Norwegian Medical Association
[4] The Norwegian Cancer Association
[5] The National Organization against Tobacco Damage
[6] The Norwegain Asthma and Allergies Association
[7] The National Association for Public Health
[8] The Joint Action Body for Health Education

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Smoking and attitudes in Norway

K. Olof Gotestam & K. Gunnar Gotestam criticize the National Tobacco Damage Council for presenting Norway as a leading country with regard to the reduction of smoking (1). It is correct to say that Norway has been a leading country in terms of legislation for halting tobacco advertising. In this, other countries are attempting to take after us. But the Council and the Council's Chairman have repeatedly emphasized that, in other fields, we are lagging behind and that we are not satisfied with the trend. More specifically, the Council has indicated that we have remained far behind many other countries in the work undertaken against passive smoking (2).

The National Tobacco Damage Council has not published any comparison of the smoking habits in Norway and in other countries. Any such analysis is complex, partly because the various countries use different methods for the collection of data, for the compilation of the interview material and for the formulation of questions. Wherever contrasts might be found in trends, it is also important to be wary of making interpretations and to refrain from drawing rash conclusions regarding the success or failure of various strategies. A number of factors play a part in the development of smoking habits within different cultures.

In making analyses of smoking habits, a minimum requirement would be for the material to be broken down according to age and sex. Figure 1 illustrates the necessity of this. The percent of daily smokers in Norway, classified by age and sex, has been given for two periods at ten year intervals. Taking the age categories, there is, for men, a clear fall in the percent of daily smokers in all age groups. This is not the case amongst women, apart from with the youngest women.

The picture becomes more complete, however, when the trend is monitored for each generation (cohort). This is possible because the chart uses an age classification based on ten-year age categories. The thin diagonal lines show the trend for each ten-year cohort over the ten-year period. For all cohorts of over 25 years of age, there is a fall in the percent of daily smokers - in both men and women.

Gotestam & Gotestam refer to an international comparison by Pierce (3). Pierce emphasizes, however, that it has not been possible to make an age adjustment for the countries which are included in the analysis. Hence, uncertainty is immediately attached to tables relating to the combined total of all age groups. The necessity of such an age adjustment can be seen again from Figure 1. Hypothetical: If the smoking percentages within individual cohorts of women were to remain unchanged in future years, with, at the same time, young generations of women smoking as much as now, we would then face an increase in the smoking percentage for the total group of 16-74 year olds.

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For men, we would not be faced with such an increase if, by cohort, they were to keep their smoking habits unaltered. The same would apply to women in, for example, Great Britain, USA and Canada, if the age-specific smoking percentage curve has the same configuration as for Norwegian men. It is probable that it is such because the smoking epidemic reached these countries several decades before Norway. This might explain the different trends seen internationally in women's smoking percentages, all age groups combined.

Of more interest, therefore, are Pierce's tables on smoking percentages for the 20-24 year age group in isolation. Here, the trend amongst Norwegian women is more positive than amongst women in the USA, Great Britain and Australia, but not as good as in Canada and Sweden.

Gotestam & Gotestam do not discuss these figures, but merely present some of Pierce's figures for all age groups combined. Pierce calculates the trends in the various countries in 1974-87 by applying a linear regression to the annual smoking percentages. Gotestam & Gotestam select the period 1977-87 from Pierce's table. They do not give an account of how they calculated the trends, but it is clear that they took the difference of the figures for 1977-87 as a percent of the 1977 figures. They then find that the number of daily smokers amongst Norwegian women, all ages, has increased by 12%. In 1977, this percentage was the lowest which the Central Statistical Office has recorded for women, all ages. Had Gotestam & Gotestam chosen the year 1979 as the base point, then the increase would have been 0.6%! For Swedish women, there is a fall of 12.9%. Had they chosen the period 1980-87, they would have found an increase of 3.8%. This shows that the method which was chosen is not tenable.

Gotestam & Gotestam do not break down the figures from their own study in terms of sex, age and education. The authors write that: "... our own example indicates that, in hospitals, the incidence of smoking can even be higher than in the population at large!" There are grounds for raising the question as to whether a psychiatric hospital is representative of Norwegian hospitals in general. In this connection, it is necessary to point to the large fall which has taken place in the smoking habits of Norwegian doctors (4).

Gotestam & Gotestam are scarcely correct in their firm conclusion that, internationally, Norway stands in reality in last place in terms of reductions in smoking in Western countries and that Norway is amongst the last in the race regarding the regulation of smoking.

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Thus, it is not said that the National Tobacco Damage Council is satisfied with the trend. We are specially concerned about the fact that no major changes have occurred in people's smoking habits in the last few years and we would not have any problems in siding with the statement made by the two authors: "The action plan for a smoke-free Norway in the year 2000, in which the Norwegian Medical Association, amongst others, is involved, should be realized more speedily and in more detail."

Oslo

Kjell Bjartveit
The National Tobacco Damage Council

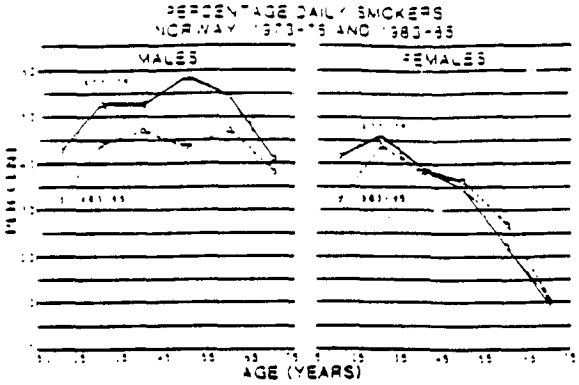

Figure 1 Annual smoking habits studies by the Central Statistical Office under commission to the National Tobacco Damage Council. Representative sample of the Norwegian population, 16-74 years of age. Sample size: ca. 2500 persons per annum. The results for 1973-75 and 1983-85 have been combined.

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K.O. Gotestam & K.G. Gotestam reply:

Kjell Bjartveit criticizes our article on smoking and attitudes in Norway (1). It is entirely clear that we are agreed on the main objective with regard to smoking.

We also agree with Bjartveit that Norway has been a leading country as far as legislation to stop damaging tobacco advertising is concerned. Our concern is that there is nothing shown to indicate that this has had any effect upon the incidence of smokers or on the use of tobacco in Norway.

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[1] Journal of the Norwegian Medical Association
[2] National Tobacco Damage Council

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We are clear about the fact that a comparison between different countries is, for methodical reasons, very complicated and we do not believe that possible success or failure can be directly assessed from such a comparison. In addition to this, there is a need for scientific evaluations of initiatives, whether they are national or international (2).

Where we have nevertheless ventured to undertake such a comparison, it is in order to direct the spotlight onto a continuing unsolved problem. We would also wish to point to the positive effects of attitude campaigns - **upon attitudes** - but to a lack of change in smoking habits (1). We assumed that the objective of intense attitude campaigns has been to change smoking habits, but we fail to see that this has sufficiently occurred.

Bjartveit feels that we have selectively chosen specific information from Pierce (3). That is correct. Bjartveit also does this when he selects the group of women of 20-24 years of age, in order then to state that "the method which was chosen is not tenable". If we examine the main results in Pierce's Table 1-4, it can be seen that the comparison which Bjartveit selects in Table 4 (3) is the only one in which Norway does not come last amongst the countries which we compared (Table 1).

Our conclusion, which is also reiterated by Bjartveit, is the most important one of all in this matter and one which we are happy to repeat:
"An action plan for a smoke-free Norway in the year 2000, in which the Norwegian Medical Association, amongst others, is involved, should be realized more speedily and in more detail."
If there is a real desire to carry out such an objective, then rather more must be done than has been done so far. Otherwise one might just as well drop the objective rather than run the risk of it being made ridiculous. Awareness is good and the attitudes to a smoke-free Norway are positive, but it is clear that this is not sufficient (1).

In many places in the USA, they have lengthy experience of comprehensive socially-orientated intervention set-ups for the reduction of, amongst other things, cardiac and vascular diseases, integrated within other medical work and health information. There has been a readiness to invest very large amounts in initiatives of this kind and they have yielded major health gains, something which accurate evaluation has also been able to confirm. Stanford University in California has shown the way in this work and we consider that many of the ideas in these set-ups can also be used in this country. A number of good ideas can be found in the Action Plan for a Smoke-Free Norway in the year 2000(4), but the majority of these have still not been implemented. Stanford Center for Research in Disease Prevention has more than ten years' experience in effective intervention, with a reduction in the incidence of

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daily smokers to less than 15%! Both continuity and follow-up have been necessary in order to obtain good results. The scientific assessment of the effect of different types of intervention has also been of central importance. We would propose that an evaluation should be made of some of the advice which has been gathered within new comprehensive and detailed guidelines for such activities, planned to cover a five year period (5):

Special target groups. At the individual level, attention should be directed towards a number of specific groups, such as school children and teenagers, pregnant women, middle-aged men (risk of cardiac and vascular disease). At the organization and environment level, activity should at the same time be directed towards both jobs (especially high-risk jobs), schools, TV, radio, adverts, the local neighbourhood, associations, local authorities and businesses/restaurants.

Variety of intervention. Based on education and information, various parallel interventions should be used, such as social support (within the family, other primary groups, companions), self-help packages, competitions and positive models (prominent members of society). Specific campaigns should be carried out, especially in local environments. Anti-smoking outpatient clinics should be set up at all larger district hospitals. (K.G.G. has had since 1977 a standing offer to start such a clinic in Trondheim, as soon as public support is given). A clearer attitude against smoking amongst doctors and other medical staff who are not directly involved in the smoking therapy is necessary and they must take the lead in this work. Duties on tobacco should be used for anti-smoking work and research. The Smoking Act which was passed two years ago should be used more consciously, for the establishment of smoke-free environments, for the minimization of smoking in public places and for the reduction of passive smoking.

Multiple channels. Information should be distributed through multiple channels in order that maximum possible numbers shall be reached. Both personal contact and the mass media should be used for this. The use of specially prepared printed material in the form of information brochures is an important element of this, but more important are the various course offers, directed towards a variety of groups.

In this way, it should be possible to use the information which exists nationally and internationally and draw up effective intervention programmes. This is wholly necessary in order to allow the objective of a smoke-free Norway in the year 2000 to be fulfilled. In Stanford's programme, the intervention itself costs around 5% of the total budget, whilst measurement and registration costs 95%. The National Tobacco Damage Council has long spent money on registration. A decent investment in intervention will be an obvious extension of the National Tobacco Damage Council's activities over many years and would largely pay for itself in national economic terms.

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Table 1 Average annual change (in percent) in the period 1974-87 in different groups(3).

Group	USA	England	Sweden	Norway
Men over 20	-0.91	-1.40	-0.99	-0.77
Women over 20	-0.33	-0.80	-0.58	+0.20
Men aged 20-24	-1.03	-0.90	-1.71	-0.80
Women aged 20-24	-0.11	-0.70	-1.31	-0.88

Trondheim

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K. Gunnar Gotestam

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Smoking and attitudes in Norway

Commenting upon our earlier article in the Journal (1, 2), Kjell Bjartveit maintains that there was a heavy increase in tobacco consumption (3, 4) and tobacco sales (5) in Norway up to 1970, but that the curve subsequently flattened out. It is correct that a large (85%) increase occurred in sales after the war (1.10 kg per person of 15 years of age and above in 1946, 1.55 kg in 1956, 2.03 kg in 1970). Against this, there was a 14% reduction in the number of men who smoked daily (from 65% in 1956 to 56% in 1970) (daily smokers were not registered prior to 1956, these figures are taken from various studies and the comparison must therefore be regarded with some caution), accompanied by a 61% increase in the number of women who smoked daily (from 23% in 1956 to 37% in 1970).

The essential point in Bajartveit's argument is that the reduction in tobacco sales can be ascribed to the legislation to stop tobacco advertising. It must be assumed that the objective of this legislation was to reduce tobacco sales and smoking. In order to be able to say something about this, these two variables must be examined in connection with the Act (which came into effect on 1/7 1975, even though it had already been discussed in Parliament in 1970 and passed in 1973).

The chart which has been quoted by Bjartveit & Lund (5) does not start from 0 but from 1,400 g on the coordinate and no statistical analysis of the results has been reported. In addition, the periods are not defined in terms of calendar years, but from 1/7 to 30/6 (probably in order to avoid excessive differences between calendar years in the event of any hoarding prior to price increases).

When total tobacco sales in Norway (The Customs and Excise Directorate) over the last 25 years are examined, as ordinarily illustrated, no essential change is noticeable as from 1975 (see Fig 1), and sales, if duty-free border sales are also included (estimated by Tiedemann's tobacco factory), are in 1989 virtually identical (2.14 kg per capita) to 1975 (2.15 kg). The fall which is quoted (5) from 1980 as a result of pricing policy is wholly offset if duty-free border sales are included (total sales also then amount to more than 2 kg in 1981-89) (cf. Fig. 1).

When the percentage of daily smokers is examined, the upward trend was broken as far back as 1969, with the result that it is difficult to state that the Act which came into effect in 1975 might have had some bearing (Fig. 1).

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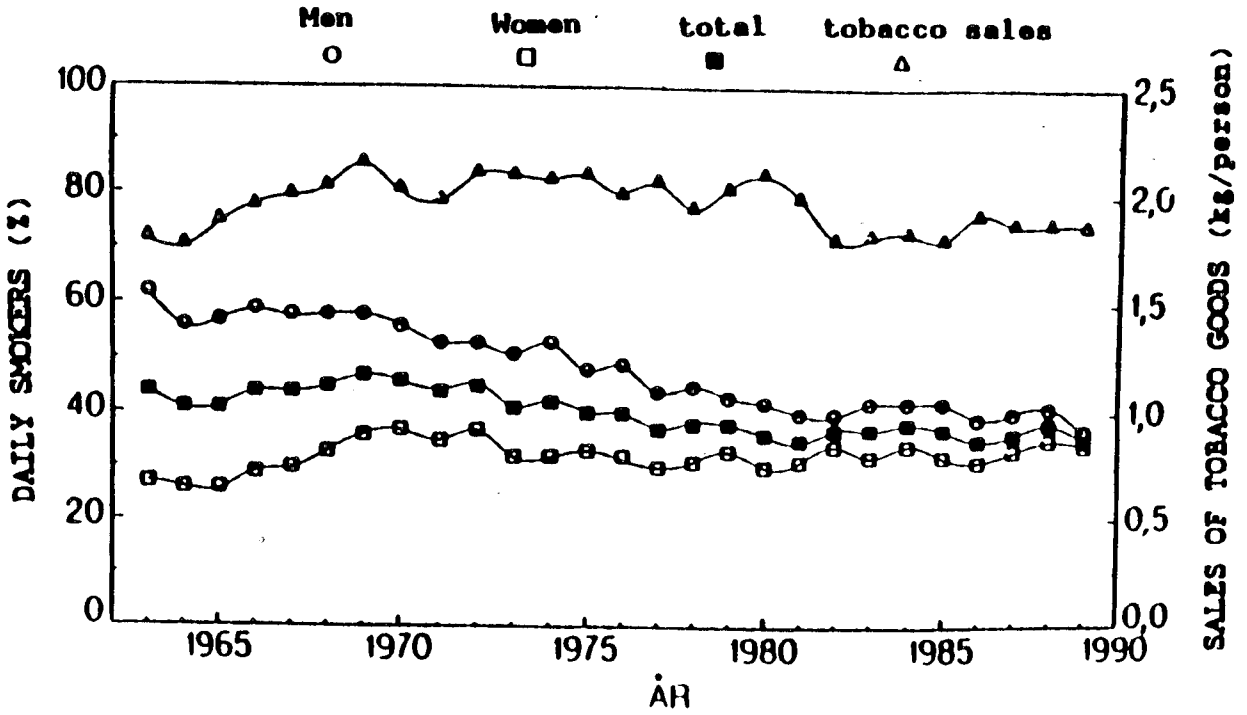

Figure 1

The left-hand axis shows the percentage of daily smokers in the population over 15 years of age (for 1963 to 1972 data from Norwegian Market Data, and for 1973 onwards from the Advisory Board on Tobacco Risks). The right-hand axis shows the sales of tobacco goods (cigarettes, cigars and pipe tobacco) in kg per person over 15 years of age (data from Customs and Excise annual reports) for the period 1963 to 1989

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Bjartveit, Thürmer & Nylenna (6) suggest that 1% of the tax revenues from tobacco products could be used to support specific tobacco control and health-promoting activities. We are happy to support this idea and would like to make the following calculation: In 1989, tobacco sales in Norway totalled 6,715,000 kg tobacco, at a total price (1,450 Kr/kg cigarettes, 700 Kr/kg tobacco) of 6,411,000,000 Kroner. Tax revenues amount to 66% (tobacco duty and value-added tax) thereof, i.e. 4,231,260,000 Kroner. If 1% of this amount, i.e. 42.3 million Kr. p.a., were spent, it would serve nicely as an initiative, in addition to the three million which the National Tobacco Damage Council now has at its disposal.

In conclusion, we can say that we are agreed upon the main objective with regard to smoking and a reduction in smoking. Even though the law to stop tobacco advertising has a meaningful content, we cannot see that it has had a fundamental effect upon the sale or use of tobacco. We also feel that, so far, all too few active initiatives have been carried out with a view to reducing smoking.

Trondheim

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[1] Journal of the Norwegian Medical Association
[2] National Tobacco Damage Council

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Smoking and attitudes in Norway

K. Olof Gotestam & K. Gunnar Gotestam and myself are agreed upon both the objectives and the means (1). The problem is one of tight budgets. Nevertheless, the authors maintain that nothing has been shown to indicate that the legislation to stop tobacco advertising has had any effect upon the incidence of smokers of the consumption of tobacco in Norway.

This legislation was discussed in Parliament in 1970, passed in 1973 and implemented from 1975. Up to 1970, we had a heavy increase in tobacco consumption in Norway (cigarettes + smoking tobacco per inhabitant of 15 years of age and above). From then on, the curve flattened out - at a level which was only half as high as the peak level quoted in the USA, Canada and Great Britain. Had consumption in Norway continued to increase at the same rate as in the 1950's and 1960's, we would have had a 50% higher consumption than that which we have today - and would still be a long way behind the peak levels in the three named countries (2) (Bjartveit K. Fifteen years of comprehensive legislation: Results and conclusions. Plenary presentation, Seventh World Conference on Tobacco & Health, Perth 1990. Currently being printed).

Deaths from lung cancer for both men and women is twice as high in, for example, Canada as in Norway (age-adjusted rates). The cessation of advertising press will be of particular significance in deterring young people from starting to smoke. What has been the trend in Norway?

Studies on smoking habits amongst Norwegian school children showed a dramatic increase in smoking up to the 1970's. For example, amongst girls in the 9th.-year class, there were 3% who smoked daily in 1957, against 28% in 1975. In 1980, it was 21% and in 1985 it was 19%. Amongst youth aged 16-24, the Central Statistical Office's annual studies of smoking habits show a clear declining trend since the start of the 1970's. The percent of daily smokers was, for both sexes, well over 40% in 1973 and now stands at under 30% for men and somewhat over 30% for women.

Whilst a host of factors have certainly contributed to these developments, it is reasonable to deduce that the legislation has also played a part. In any event, there are no grounds whatsoever for the negative conclusion reached by Gotestam & Gotestam.

The trend could however be better and more must be done to speed up the work against one of the foremost health problems of our time. On that we are agreed.

Oslo

Kjell Bjartveit

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[1] Journal of the Norwegian Medical Association
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Psychological Reports, 1992, 70, 991-997. © Psychological Reports 1992

CHANGES IN SMOKING LEGISLATION, ATTITUDES, AND BEHAVIOR[1]

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Summary.—Legislative changes and attitude campaigns are generally acknowledged to be effective in the battle against smoking and its health hazards. In some instances it seems as if these means are insufficient to produce necessary change. In this study, the following general hypotheses were posed: (1) an advertising ban leads to reduced tobacco sale and (2) to reduced smoking; (3) attitude campaigns improve attitudes about regulation of smoking and (4) reduce smoking. In addition, two national hypotheses were formulated. The results supported neither hypothesis! It is concluded that it is important to follow the development closely with scientific methods of high quality. Further, smoking campaigns must include a broad spectrum of interventions to be sufficiently effective.

In the campaign against smoking and its health hazards, different approaches have been used. Among the most widely used and most widely acknowledged as effective are legislative changes and attitude campaigns. We have noted some examples in which these approaches do not seem as effective as expected and so think this might be of interest to others working in the field; for details see Götestam and Götestam (1990a, 1990b, 1990c).

Hypotheses

Underlying hypotheses for reduction of smoking are the following: (1) an advertising ban reduces tobacco sale and (2) consequently reduces smoking; (3) attitude campaigns improve attitudes towards smoking regulation and (4) consequently reduce smoking behavior. Based on these hypotheses and considerable work along these lines, our government has in addition stated that (5) prevalence of smoking has substantially decreased during the last ten years (National Council of Tobacco & Health, 1990, p. 2) and (6) Norway has a prominent position in the work on cessation of smoking (Bjartveit, 1990).

To say that over-all smoking behavior has not changed significantly could be just another way of telling only half the truth. The data will probably be more interesting when one looks at them after dividing them into smaller groups, say, by sex and age. On this basis one could put forward the hypothesis that the ("less important") older people can account for such large numbers that the (possibly) great reduction among younger people makes a less visible contribution.

[1]Reprint requests to Olof Götestam, University of Trondheim, Department of Psychiatry and Behavioural Medicine, Östmarka Hospital, PO Box 3008 Lade, N-7002 Trondheim, Norway. A preliminary version of the study was presented at the "Young Researchers Competition" in Oslo in 1988 by Olof Götestam.

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Empirical Evidence

Advertising ban and reduction of tobacco sale.—From a presentation of the tobacco sales in Norway by Bjartveit and Lund (1987), the impression is that sales ceased to increase from 1970 and from 1979-80 decreased dramatically. Firstly, the act of total tobacco advertisement ban was enforced in 1975, and heavy prices introduced 1980-82.

Further, Bjartveit and Lund (1987) show us a figure in which the ordinate begins at 1.4 kg (instead of 0 which should be used). In addition, they have not included the customs sale at the border (data available since 1981). Given lack of tests showing significant changes, the data should be treated and presented in a conservative manner (either in a figure with its y axis anchored at zero or in a table). Treated in such a manner the changes claimed to appear after the advertising ban are no longer evident.

Advertising ban and reduction of smoking.—Similarly, in conflict with National Council of Tobacco and Health (1990), the number of daily smokers does not seem to have decreased during the last ten years; see Table 1. The enacted legislation does not seem to have affected either tobacco sale or number of regular smokers in Norway. This does not mean that the law is poor or inappropriate. As one of several actions, it might be an important although insufficient one.

TABLE 1

PERCENT DAILY SMOKERS OVER 15 YEARS IN NORWAY (FOR 1963-72 DATA FROM NORWAY MARKET DATA AND SINCE 1973 FROM NORWEGIAN NATIONAL TOBACCO COUNCIL) AND TOBACCO SALES (CIGARETTES, CIGARS, PIPE TOBACCO) IN KG PER INHABITANT OF 15 YEARS AND OVER (DATA FROM CUSTOMS AND PRICE DEPARTMENT YEARLY REPORTS) IN THE PERIOD 1963-1989

Year	Percent Daily Smokers			Tobacco Sales (kg)	Incl. Customs Sales (kg)
	Men	Women	Total		
1963	62	27	44.5	1.80	
1964	56	26	41.0	1.77	
1965	57	26	41.5	1.88	
1966	59	29	44.0	1.95	
1967	58	30	44.0	2.00	
1968	58	33	45.5	2.04	
1969	58	36	47.0	2.15	
1970	56	37	46.5	2.03	
1971	53	35	44.0	1.98	
1972	53	37	45.0	2.11	
1973	51	32	41.5	2.10	
1974	53	32	42.5	2.08	
1975	48	33	40.5	2.10	
1976	49	32	40.5	2.01	
1977	44	30	37.0	2.07	

(continued on next page)

Note.—From 1981 are added the customs tobacco sales to a total tobacco sale (data from Customs and Price Department yearly reports).

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TABLE 1 (CONT'D)
PERCENT DAILY SMOKERS OVER 15 YEARS IN NORWAY (FOR 1963-72 DATA FROM NORWAY MARKET DATA AND SINCE 1973 FROM NORWEGIAN NATIONAL TOBACCO COUNCIL) AND TOBACCO SALES (CIGARETTES, CIGARS, PIPE TOBACCO) IN KG PER INHABITANT OF 15 YEARS AND OVER (DATA FROM CUSTOMS AND PRICE DEPARTMENT YEARLY REPORTS) IN THE PERIOD 1963-1989

Year	Percent Daily Smokers			Tobacco Sales (kg)	Incl. Customs Sales (kg)
	Men	Women	Total		
1978	45	31	38.0	1.95	
1979	43	33	38.0	2.04	
1980	42	30	36.0	2.11	
1981	40	31	35.5	2.00	2.08
1982	40	34	37.0	1.81	1.99
1983	42	32	37.0	1.83	2.09
1984	42	34	38.0	1.84	2.12
1985	42	32	37.0	1.91	2.15
1986	39	31	35.0	1.92	2.20
1987	40	33	36.5	1.88	2.15
1988	41	35	38.0	1.88	2.15
1989	37	34	35.5	1.87	2.14
1990	36	33	34.5	1.87	2.14

Note.—From 1981 are added the customs tobacco sales to a total tobacco sale (data from Customs and Price Department yearly reports).

Attitude campaigns and improvement of attitudes and behavior.—The smoking campaign has led to substantial change in attitudes towards smoking. In a small study of our own (Götestam & Götestam, 1990c), attitudes towards smoking regulation (smoking as a milieu problem, need for nonsmoking rooms, etc.) changed from 30 to 45% in 1979-80 to 57 to 86% in 1988-89 (see Table 2), and 62 to 80% wanted to quit smoking in 1988-89 compared to only 25 to 26% in 1979-80. What about smoking prevalence? This had not changed throughout the period (but showed a small increase from 43 to 48%)! The same is true for national data, which were somewhat lower, but stable; see Table 2. A similar discrepancy between attitudes and behavior has

TABLE 2
PERCENT POSITIVE ANSWERS ON THREE QUESTIONS, PLUS DAILY SMOKERS IN OUR MATERIAL AND IN NORWAY

Questions	1979	1980	1988	1989
Smoking is a milieu problem at my working site	32	30	60	57
We need more nonsmoking rooms at the hospital	40	45	86	66
I want to quit smoking	25	26	62	80
Daily smokers	43	43	45	48
Daily smokers in Norway (The Norwegian National Tobacco Council)	38	36	38	36

Note.—All percentages are computed on the total number of respondents, both smokers and nonsmokers, except the quit smoking question.

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been shown in relation to AIDS (Sundet, Magnus, Kvalem, Grönnesby, & Bakketeig, 1989). The old myth that behavior changes follow attitude changes still seems unproven. Of course, positive attitudes may be a good ground for later behavior change, but probably it is more effective to change the behavior first, and the attitudes will follow (cf. Lewin, 1943). It seems important also to offer specific treatment programs for smokers wanting to quit (Schwartz, 1987).

Smoking prevalence.—As already shown above, the number of daily smokers in Norway does not seem to have been reduced during the last ten years.

Norway's position in smoking cessation work.—The last ten years has been a period when in several other countries reports have indicated remarkable reduction in smoking. In a comparison by Pierce (1989)[2] of prevalence in 1977-87, USA, England, and Sweden had male prevalences from 24.0% to 35.0% while Norway had 41.3%, and similarly, for women these countries had prevalences of 26.8 to 31.0% compared to 33.3% in Norway. The reduction in these countries during the same period was reported for men as 22.5 to 25.0% compared to 8.0% in Norway and for women as 12.9 to 18.4% reduction compared to 12.0% *increase*!

Discussion

It appears that all of the hypotheses and assumptions lack support. One of them is among the myths, i.e., the one about the relation between attitudes and behavior (cf. Lewin, 1943).

Of course, the present study does not disprove the underlying assumption that bans on advertisement and attitude campaigns affect smoking behavior. A possible change in tobacco sale and smoking prevalence could be neutralized by differences among sex and age groups and by changes in smoking patterns.

In a review, Hewitt and Blane (1984) looked at a dozen studies designed to implement changes in alcohol-related knowledge, attitudes, and behavior. The result was that out of 12 studies aimed towards changes in knowledge, 7 succeeded, 4 failed, and 1 gave mixed results. Out of the 9 studies aimed towards attitude change, only 2 succeeded, 5 failed, and 2 gave mixed results. Of the 12 studies aimed towards behavior change, 8 failed, 3 had rather unimpressive positive changes, and 1 mixed results. This review supports our conclusions that improvements in knowledge or attitudes do not necessarily result in change in behavior.

Collins and Cellucci (1991) reported an effect on knowledge but none

[2]This summative comparison (due to lack of space) might be somewhat misleading, but is intended to point at the fact that Norway is consistently poor in almost all smoking-reduction comparisons. For detailed comparisons, see Pierce (1989).

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on attitudes or behavior (alcohol involvement) after evaluating an "alcohol education presentation with a media component of public service announcement." Further, there was no correlation between knowledge and either attitudes or behavior (alcohol involvement). There was, however, a strong negative correlation between behavior (alcohol involvement) and attitudes.

Cameron and Playfair (1991) argue that barring contaminated blood has worked much better than education to reduce the AIDS risk. They refer to Ekstrand and Coates (1990) as an example of education that does not work and cite the upwardly mobile pattern of AIDS between the years 1984 and 1990. These increases were, however, around 50% in the first two years, and thereafter only 10%, weakening their criticism. Furthermore, there are several educational programs or attitude campaigns related to AIDS (i.e., Sundet, *et al.*, 1989) with much less impressive changes than in the Ekstrand and Coates (1990) study, supporting these authors' conclusions that more practically oriented intervention and training are more effective than campaigns based only on information. Needle-sharing, and consequently spread of HIV, has been possible to reduce by specific exchange schemes, both in the USA and in Europe (Guydish, Abramowitz, Woods, Black, & Sorensen, 1990; Stimson, Alldritt, Dolan, & Donoghoe, 1988).

Further, few reports have empirically dealt with changes in behaviors in relation to improved health. Ekstrand and Coates (1990) reported change and maintenance of safer sexual behaviors in homosexual men in San Francisco. According to self-reports, some unsafe behaviors were reduced from about 35% in 1984 to 2 to 4% in 1987. Among the predictors for safer sex were being older, having friends/lovers with AIDS, and earlier sex habits. The ingredients of this multifaceted, community-level risk-reduction intervention program (described by Coates, 1990) was based on behavior change ascertained by the use of information, motivation (increased sense of personal threat), skills training (by demonstration and modeling), and change in peer norms. The program worked through a variety of existing avenues, like schools, worksites, health care facilities, organizations, churches, and clubs. The program was also extensively empirically evaluated over time (Ekstrand & Coates, 1990).

Conclusions

Scientific conclusions.—It is of utmost importance that the actions taken are closely followed empirically over time. This work should be done at the highest possible scientific level to enable clear descriptions and valid conclusions. It is also necessary to follow parallel development in countries or environments where commensurability is high. Changes or lack of changes, departing from parallel arrangements in other countries, could then make us more attentive to reasons why imposed actions do not work as expected.

Practical conclusions.—The actions taken in Norway so far may be good

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but are not sufficient to reach the goals set, i.e., "A smokefree Norway Year 2000" (Action Plan for a Smokefree Norway Year 2000, 1989). A multifaceted, broad-spectrum, community-based approach must be implemented (cf. Coates, 1990). McManus, *et al.* (1989) describe an extensive community-based intervention program for smoking cessation. Bjartveit, Thürmer, and Nylenna (1990) have suggested that 1% of the tobacco income tax should be set aside for this work. We suggest (see Götestam & Götestam, 1990b) that this amount—which is 42.3 million NOK (about 6.5 million US$)—be used to implement change of smoking behavior by a multimodal approach, including special programs for different groups, through a variety of intervention channels.

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CHANGES IN SMOKING LEGISLATION, ATTITUDES, AND BEHAVIOR[1]

K. OLOF GÖTESTAM AND K. GUNNAR GÖTESTAM

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Summary.—Legislative changes and attitude campaigns are generally acknowledged to be effective in the battle against smoking and its health hazards. In some instances it seems as if these means are insufficient to produce necessary change. In this study, the following general hypotheses were posed: (1) an advertising ban leads to reduced tobacco sale and (2) to reduced smoking; (3) attitude campaigns improve attitudes about regulation of smoking and (4) reduce smoking. In addition, two national hypotheses were formulated. The results supported neither hypothesis! It is concluded that it is important to follow the development closely with scientific methods of high quality. Further, smoking campaigns must include a broad spectrum of interventions to be sufficiently effective.

In the campaign against smoking and its health hazards, different approaches have been used. Among the most widely used and most widely acknowledged as effective are legislative changes and attitude campaigns. We have noted some examples in which these approaches do not seem as effective as expected and so think this might be of interest to others working in the field; for details see Götestam and Götestam (1990a, 1990b, 1990c).

Hypotheses

Underlying hypotheses for reduction of smoking are the following: (1) an advertising ban reduces tobacco sale and (2) consequently reduces smoking; (3) attitude campaigns improve attitudes towards smoking regulation and (4) consequently reduce smoking behavior. Based on these hypotheses and considerable work along these lines, our government has in addition stated that (5) prevalence of smoking has substantially decreased during the last ten years (National Council of Tobacco & Health, 1990, p. 2) and (6) Norway has a prominent position in the work on cessation of smoking (Bjartveit, 1990).

To say that over-all smoking behavior has not changed significantly could be just another way of telling only half the truth. The data will probably be more interesting when one looks at them after dividing them into smaller groups, say, by sex and age. On this basis one could put forward the hypothesis that the ("less important") older people can account for such large numbers that the (possibly) great reduction among younger people makes a less visible contribution.

[1]Reprint requests to Olof Götestam, University of Trondheim, Department of Psychiatry and Behavioural Medicine, Östmarka Hospital, PO Box 3008 Lade, N-7002 Trondheim, Norway. A preliminary version of the study was presented at the "Young Researchers Competition" in Oslo in 1988 by Olof Götestam.

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Empirical Evidence

Advertising ban and reduction of tobacco sale.—From a presentation of the tobacco sales in Norway by Bjartveit and Lund (1987), the impression is that sales ceased to increase from 1970 and from 1979-80 decreased dramatically. Firstly, the act of total tobacco advertisement ban was enforced in 1975, and heavy prices introduced 1980-82.

Further, Bjartveit and Lund (1987) show us a figure in which the ordinate begins at 1.4 kg (instead of 0 which should be used). In addition, they have not included the customs sale at the border (data available since 1981). Given lack of tests showing significant changes, the data should be treated and presented in a conservative manner (either in a figure with its y axis anchored at zero or in a table). Treated in such a manner the changes claimed to appear after the advertising ban are no longer evident.

Advertising ban and reduction of smoking.—Similarly, in conflict with National Council of Tobacco and Health (1990), the number of daily smokers does not seem to have decreased during the last ten years; see Table 1. The enacted legislation does not seem to have affected either tobacco sale or number of regular smokers in Norway. This does not mean that the law is poor or inappropriate. As one of several actions, it might be an important although insufficient one.

TABLE 1

PERCENT DAILY SMOKERS OVER 15 YEARS IN NORWAY (FOR 1963-72 DATA FROM NORWAY MARKET DATA AND SINCE 1973 FROM NORWEGIAN NATIONAL TOBACCO COUNCIL) AND TOBACCO SALES (CIGARETTES, CIGARS, PIPE TOBACCO) IN KG PER INHABITANT OF 15 YEARS AND OVER (DATA FROM CUSTOMS AND PRICE DEPARTMENT YEARLY REPORTS) IN THE PERIOD 1963-1989

Year	Percent Daily Smokers			Tobacco Sales (kg)	Incl. Customs Sales (kg)
	Men	Women	Total		
1963	62	27	44.5	1.80	
1964	56	26	41.0	1.77	
1965	57	26	41.5	1.88	
1966	59	29	44.0	1.95	
1967	58	30	44.0	2.00	
1968	58	33	45.5	2.04	
1969	58	36	47.0	2.15	
1970	56	37	46.5	2.03	
1971	53	35	44.0	1.98	
1972	53	37	45.0	2.11	
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1974	53	32	42.5	2.08	
1975	48	33	40.5	2.10	
1976	49	32	40.5	2.01	
1977	44	30	37.0	2.07	

(continued on next page)

Note.—From 1981 are added the customs tobacco sales to a total tobacco sale (data from Customs and Price Department yearly reports).

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Year	Percent Daily Smokers			Tobacco Sales (kg)	Incl. Customs Sales (kg)
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Attitude campaigns and improvement of attitudes and behavior.—The smoking campaign has led to substantial change in attitudes towards smoking. In a small study of our own (Götestam & Götestam, 1990c), attitudes towards smoking regulation (smoking as a milieu problem, need for nonsmoking rooms, etc.) changed from 30 to 45% in 1979-80 to 57 to 86% in 1988-89 (see Table 2), and 62 to 80% wanted to quit smoking in 1988-89 compared to only 25 to 26% in 1979-80. What about smoking prevalence? This had not changed throughout the period (but showed a small increase from 43 to 48%)! The same is true for national data, which were somewhat lower, but stable; see Table 2. A similar discrepancy between attitudes and behavior has

TABLE 2
PERCENT POSITIVE ANSWERS ON THREE QUESTIONS, PLUS DAILY SMOKERS IN OUR MATERIAL AND IN NORWAY

Questions	1979	1980	1988	1989
Smoking is a milieu problem at my working site	32	30	60	57
We need more nonsmoking rooms at the hospital	40	45	86	66
I want to quit smoking	25	26	62	80
Daily smokers	43	43	45	48
Daily smokers in Norway (The Norwegian National Tobacco Council)	38	36	38	36

Note.—All percentages are computed on the total number of respondents, both smokers and nonsmokers, except the quit smoking question.

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been shown in relation to AIDS (Sundet, Magnus, Kvalem, Grönnesby, & Bakketeig, 1989). The old myth that behavior changes follow attitude changes still seems unproven. Of course, positive attitudes may be a good ground for later behavior change, but probably it is more effective to change the behavior first, and the attitudes will follow (cf. Lewin, 1943). It seems important also to offer specific treatment programs for smokers wanting to quit (Schwartz, 1987).

Smoking prevalence.—As already shown above, the number of daily smokers in Norway does not seem to have been reduced during the last ten years.

Norway's position in smoking cessation work.—The last ten years has been a period when in several other countries reports have indicated remarkable reduction in smoking. In a comparison by Pierce (1989)[2] of prevalence in 1977-87, USA, England, and Sweden had male prevalences from 24.0% to 35.0% while Norway had 41.3%, and similarly, for women these countries had prevalences of 26.8 to 31.0% compared to 33.3% in Norway. The reduction in these countries during the same period was reported for men as 22.5 to 25.0% compared to 8.0% in Norway and for women as 12.9 to 18.4% reduction compared to 12.0% *increase*!

Discussion

It appears that all of the hypotheses and assumptions lack support. One of them is among the myths, i.e., the one about the relation between attitudes and behavior (cf. Lewin, 1943).

Of course, the present study does not disprove the underlying assumption that bans on advertisement and attitude campaigns affect smoking behavior. A possible change in tobacco sale and smoking prevalence could be neutralized by differences among sex and age groups and by changes in smoking patterns.

In a review, Hewitt and Blane (1984) looked at a dozen studies designed to implement changes in alcohol-related knowledge, attitudes, and behavior. The result was that out of 12 studies aimed towards changes in knowledge, 7 succeeded, 4 failed, and 1 gave mixed results. Out of the 9 studies aimed towards attitude change, only 2 succeeded, 5 failed, and 2 gave mixed results. Of the 12 studies aimed towards behavior change, 8 failed, 3 had rather unimpressive positive changes, and 1 mixed results. This review supports our conclusions that improvements in knowledge or attitudes do not necessarily result in change in behavior.

Collins and Cellucci (1991) reported an effect on knowledge but none

[2]This summative comparison (due to lack of space) might be somewhat misleading, but is intended to point at the fact that Norway is consistently poor in almost all smoking-reduction comparisons. For detailed comparisons, see Pierce (1989).

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on attitudes or behavior (alcohol involvement) after evaluating an "alcohol education presentation with a media component of public service announcement." Further, there was no correlation between knowledge and either attitudes or behavior (alcohol involvement). There was, however, a strong negative correlation between behavior (alcohol involvement) and attitudes.

Cameron and Playfair (1991) argue that barring contaminated blood has worked much better than education to reduce the AIDS risk. They refer to Ekstrand and Coates (1990) as an example of education that does not work and cite the upwardly mobile pattern of AIDS between the years 1984 and 1990. These increases were, however, around 50% in the first two years, and thereafter only 10%, weakening their criticism. Furthermore, there are several educational programs or attitude campaigns related to AIDS (i.e., Sundet, *et al.*, 1989) with much less impressive changes than in the Ekstrand and Coates (1990) study, supporting these authors' conclusions that more practically oriented intervention and training are more effective than campaigns based only on information. Needle-sharing, and consequently spread of HIV, has been possible to reduce by specific exchange schemes, both in the USA and in Europe (Guydish, Abramowitz, Woods, Black, & Sorensen, 1990; Stimson, Alldritt, Dolan, & Donoghoe, 1988).

Further, few reports have empirically dealt with changes in behaviors in relation to improved health. Ekstrand and Coates (1990) reported change and maintenance of safer sexual behaviors in homosexual men in San Francisco. According to self-reports, some unsafe behaviors were reduced from about 35% in 1984 to 2 to 4% in 1987. Among the predictors for safer sex were being older, having friends/lovers with AIDS, and earlier sex habits. The ingredients of this multifaceted, community-level risk-reduction intervention program (described by Coates, 1990) was based on behavior change ascertained by the use of information, motivation (increased sense of personal threat), skills training (by demonstration and modeling), and change in peer norms. The program worked through a variety of existing avenues, like schools, worksites, health care facilities, organizations, churches, and clubs. The program was also extensively empirically evaluated over time (Ekstrand & Coates, 1990).

Conclusions

Scientific conclusions.—It is of utmost importance that the actions taken are closely followed empirically over time. This work should be done at the highest possible scientific level to enable clear descriptions and valid conclusions. It is also necessary to follow parallel development in countries or environments where commensurability is high. Changes or lack of changes, departing from parallel arrangements in other countries, could then make us more attentive to reasons why imposed actions do not work as expected.

Practical conclusions.—The actions taken in Norway so far may be good

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but are not sufficient to reach the goals set, i.e., "A smokefree Norway Year 2000" (Action Plan for a Smokefree Norway Year 2000, 1989). A multifaceted, broad-spectrum, community-based approach must be implemented (cf. Coates, 1990). McManus, *et al.* (1989) describe an extensive community-based intervention program for smoking cessation. Bjartveit, Thürmer, and Nylenna (1990) have suggested that 1% of the tobacco income tax should be set aside for this work. We suggest (see Götestam & Götestam, 1990b) that this amount—which is 42.3 million NOK (about 6.5 million US$)—be used to implement change of smoking behavior by a multimodal approach, including special programs for different groups, through a variety of intervention channels.

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Underlying hypotheses for reduction of smoking are the following: (1) an advertising ban reduces tobacco sale and (2) consequently reduces smoking; (3) attitude campaigns improve attitudes towards smoking regulation and (4) consequently reduce smoking behavior. Based on these hypotheses and considerable work along these lines, our government has in addition stated that (5) prevalence of smoking has substantially decreased during the last ten years (National Council of Tobacco & Health, 1990, p. 2) and (6) Norway has a prominent position in the work on cessation of smoking (Bjartveit, 1990).

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It appears that all of the hypotheses and assumptions lack support. One of them is among the myths, i.e., the one about the relation between attitudes and behavior (cf. Lewin, 1943).

Of course, the present study does not disprove the underlying assumption that bans on advertisement and attitude campaigns affect smoking behavior. A possible change in tobacco sale and smoking prevalence could be neutralized by differences among sex and age groups and by changes in smoking patterns.

In a review, Hewitt and Blane (1984) looked at a dozen studies designed to implement changes in alcohol-related knowledge, attitudes, and behavior. The result was that out of 12 studies aimed towards changes in knowledge, 7 succeeded, 4 failed, and 1 gave mixed results. Out of the 9 studies aimed towards attitude change, only 2 succeeded, 5 failed, and 2 gave mixed results. Of the 12 studies aimed towards behavior change, 8 failed, 3 had rather unimpressive positive changes, and 1 mixed results. This review supports our conclusions that improvements in knowledge or attitudes do not necessarily result in change in behavior.

Collins and Cellucci (1991) reported an effect on knowledge but none

[2]This summative comparison (due to lack of space) might be somewhat misleading, but is intended to point at the fact that Norway is consistently poor in almost all smoking-reduction comparisons. For detailed comparisons, see Pierce (1989).

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on attitudes or behavior (alcohol involvement) after evaluating an "alcohol education presentation with a media component of public service announcement." Further, there was no correlation between knowledge and either attitudes or behavior (alcohol involvement). There was, however, a strong negative correlation between behavior (alcohol involvement) and attitudes.

Cameron and Playfair (1991) argue that barring contaminated blood has worked much better than education to reduce the AIDS risk. They refer to Ekstrand and Coates (1990) as an example of education that does not work and cite the upwardly mobile pattern of AIDS between the years 1984 and 1990. These increases were, however, around 50% in the first two years, and thereafter only 10%, weakening their criticism. Furthermore, there are several educational programs or attitude campaigns related to AIDS (i.e., Sundet, *et al.*, 1989) with much less impressive changes than in the Ekstrand and Coates (1990) study, supporting these authors' conclusions that more practically oriented intervention and training are more effective than campaigns based only on information. Needle-sharing, and consequently spread of HIV, has been possible to reduce by specific exchange schemes, both in the USA and in Europe (Guydish, Abramowitz, Woods, Black, & Sorensen, 1990; Stimson, Alldritt, Dolan, & Donoghoe, 1988).

Further, few reports have empirically dealt with changes in behaviors in relation to improved health. Ekstrand and Coates (1990) reported change and maintenance of safer sexual behaviors in homosexual men in San Francisco. According to self-reports, some unsafe behaviors were reduced from about 35% in 1984 to 2 to 4% in 1987. Among the predictors for safer sex were being older, having friends/lovers with AIDS, and earlier sex habits. The ingredients of this multifaceted, community-level risk-reduction intervention program (described by Coates, 1990) was based on behavior change ascertained by the use of information, motivation (increased sense of personal threat), skills training (by demonstration and modeling), and change in peer norms. The program worked through a variety of existing avenues, like schools, worksites, health care facilities, organizations, churches, and clubs. The program was also extensively empirically evaluated over time (Ekstrand & Coates, 1990).

Conclusions

Scientific conclusions.—It is of utmost importance that the actions taken are closely followed empirically over time. This work should be done at the highest possible scientific level to enable clear descriptions and valid conclusions. It is also necessary to follow parallel development in countries or environments where commensurability is high. Changes or lack of changes, departing from parallel arrangements in other countries, could then make us more attentive to reasons why imposed actions do not work as expected.

Practical conclusions.—The actions taken in Norway so far may be good

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but are not sufficient to reach the goals set, i.e., "A smokefree Norway Year 2000" (Action Plan for a Smokefree Norway Year 2000, 1989). A multifaceted, broad-spectrum, community-based approach must be implemented (cf. Coates, 1990). McManus, *et al.* (1989) describe an extensive community-based intervention program for smoking cessation. Bjartveit, Thürmer, and Nylenna (1990) have suggested that 1% of the tobacco income tax should be set aside for this work. We suggest (see Götestam & Götestam, 1990b) that this amount—which is 42.3 million NOK (about 6.5 million US$)—be used to implement change of smoking behavior by a multimodal approach, including special programs for different groups, through a variety of intervention channels.

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Statement of

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August 1, 1986

Hearing on Proposals To Ban or Restrict
Tobacco Product Advertising

Subcommittee on Health and the Environment
House Committee on Energy and Commerce

Witness for the Tobacco Institute

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Statement of Roger D. Blackwell

before the

Committee on Energy and Commerce
Subcommittee on Health and the Environment

August 1, 1986

Mr. Chairman and members of the Subcommittee, my name is Roger D. Blackwell. I am Professor of Marketing at Ohio State University in Columbus, Ohio, and President of Roger Blackwell Associates, Inc., a marketing consulting firm. I am co-author of the leading textbook on consumer behavior, and I have written many articles on the subject. My purpose today is to discuss evidence that relates to measures being considered by the Subcommittee that would ban or further restrict tobacco product advertising.

In Part I of my testimony, I discuss the evidence showing that a person's decision to become a smoker is shaped primarily by parents and peers, not by advertising. In Part II of my testimony, I discuss studies indicating that cigarette advertising has no significant impact on "primary demand" -- that is, it does not convert non-smokers to smokers. In Part III of my testimony, I briefly discuss the experience of other countries, which offers additional evidence that banning or further restricting cigarette advertising would not affect consumption trends.

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I. THE DECISION TO BECOME A SMOKER

Researchers investigating how people become smokers focus on, among other things, the attitudes that people develop toward smoking before they first try a cigarette and on their actual experience in smoking. Leventhal and Cleary, (1980); Flay et al. (1983). Both are pertinent to consideration of the proposals before you. I address them below.[1]

The evidence supports the conclusion of Dr. Mortimore B. Lipsett, Director of NIH's National Institute of Child Health and Human Development, in his testimony before this Subcommittee three years ago. As he stated, "the most forceful determinants of smoking are parents, peers, and older siblings." The research does not support the conclusion that cigarette advertising causes people to smoke.

A. The Non-Smoking Period

Studies show that people acquire attitudes toward smoking as children, long before they try their first cigarette, and that these attitudes are reliable predictors of whether a person will become a smoker. Parents and peers are the most powerful influences in shaping a youth's attitude toward smoking, but a youth's decision to try smoking also is significantly influenced by whether the stereotypical image of "the smoker" corresponds to the youth's own self-image.

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[1] A bibliography of the studies discussed in my testimony is attached.

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Studies demonstrate that the stereotypical image of "the smoker" is not the flattering one that antitobacco advocates commonly accuse cigarette advertising of promoting or perpetuating.

1. Children's Attitudes Toward Smoking as Predictors

Studies confirm that, prior to their initial trial of cigarettes, children develop attitudes towards smoking. Those whose attitudes toward smoking are most negative are least likely to try cigarettes and become regular smokers. This self-evident proposition has been confirmed in studies by Chassin et al. (1984), and Bauman et al. (1984).[1]

2. The Sources of Children's Attitudes Toward Smoking

Relatively little literature focuses on the sources of children's attitudes toward smoking. The available research indicates, however, that parental smoking significantly affects children's beliefs on the subject. The more parents smoke, the less children tend to have negative views on smoking. Moreover, the less parents discourage smoking, the more children believe that smoking makes the smoker "popular."

Researchers also have found that the more children's friends smoke, the more likely it is that children will believe

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[1] The Chassin study in 1984 also found that those who were to try cigarettes in the course of the two-year study shared several characteristics. Those students who were to try smoking were likely to be more tolerant of non-conformist behavior than those who did not.

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that smoking is a source of popularity and enjoyment, and the less they will believe it has adverse health consequences. E.g., McAlister et al. (1984). The conclusion that children's smoking-related beliefs and attitudes are learned through their experience with friends and parents is supported by cross-sectional studies showing that children whose parents, siblings, and friends smoke are themselves more likely to smoke. Cf. Flay et al. (1983); Bewley et al. (1974).

Non-smokers and smokers alike also seem to have fairly well-defined images of what "the smoker" is like. A person is most likely to become a smoker if he views that stereotype positively and his self-image corresponds to it. See also, e.g., Chassin et al. (1981b); Barton et al. (1982). Children report a distinct image of "the smoker" -- not the flattering one that antitobacco advocates attribute to cigarette advertising. E.g., McKennell and Bynner (1969). Not surprisingly, smokers have self-concepts that are more consistent with the smoker stereotype than do non-smokers. Id.

Despite all of the supposed efforts of cigarette advertising to foster a "positive" image of smoking, the stereotype of "the smoker" that young people have is decidedly ambivalent, at best. The stereotypical smoker is viewed as less educationally successful, less healthy and "tougher" than the stereotypical non-smoker -- and non-smokers generally view other non-smokers as more desirable to have as friends than smokers. While male smokers are viewed as more interested in

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the opposite sex than male non-smokers, female non-smokers are viewed as more interested in the opposite sex than female smokers. E.g., Chassin et al. (1981b); McKennell and Bynner (1969); Barton et al. (1982).

It appears that the formation of the smoker image precedes the onset of smoking. Non-smokers who have self-images that most closely match the stereotype of "the smoker" are the most likely to plan to smoke in the near future. Chassin et al. (1981b). But the smoker stereotype that prevails among young people, including young people who smoke, is not the positive image that is found in some cigarette advertisements. That finding strongly suggests that the image of "the smoker" that young people develop is not derived from cigarette advertising, and that a complex array of non-advertising influences is instead responsible for a young person's decision to smoke.

B. Experimentation

Most people experiment with cigarettes; it has been asserted that between 80 and 90 percent of all teenagers try a cigarette at some time. Flay et al. (1983); Hirschman et al. (1984). However, only a relatively small percentage of those who try cigarettes become smokers. Leventhal and Cleary (1980) report that the percent of smokers in grade school, junior high school and senior high school rarely exceeds 50 percent of the triers.

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Peer pressure, as well as attitudes toward smoking, appears to be a primary factor in determining whether a person will experiment with smoking. Most youngsters try their first cigarette in the company of others (Friedman et al. (1985)), and there is usually pressure to participate in the group activity. In accordance with this and other similar research, Biglan and Lichtenstein (1984, p. 218) concluded that "peer influence is the preeminent factor in the onset of experimentation" with cigarettes.

Hirschman et al. (1984) examined factors that lead triers of one cigarette to try a second cigarette. Whether a person tries a second cigarette is associated directly with the person's attitude toward smoking, whether the person has siblings who smoke, whether more than half the person's friends smoke, whether the person is a "risk-taker," and whether the person coughed while trying the first cigarette.

Friedman et al. (1985) also provide some insight regarding differences between persistent and occasional experimenters. Persistent experimenters had initial smoking situations in which more people were present and more people smoked. Persistent smokers reported more frequent pleasant experiences with smoking. They were also more likely than occasional experimenters to have planned to smoke a second or third time.

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C. The Role of Advertising in a Person's Decision To Smoke

Although considerable research has been conducted into the general relationship between cigarette advertising and aggregate demand (see Part II, below), it has been quite rare for literature dealing with why people smoke to include variables addressing advertising. When these variables have been included, however, they do not support the contention that cigarette advertising causes people to smoke. To the contrary, the relatively early studies that have addressed the subject -- which focused on attitudes toward cigarette advertising on television -- revealed in young people a skepticism and distaste for cigarette advertising. E.g., Levitt and Edwards (1970); Beal et al. (1971); Kelson et al. (1975).

In short, I have found no significant evidence to indicate that advertising either directly causes people to smoke or that it shapes attitudes towards smoking.

II. EFFECT OF ADVERTISING ON AGGREGATE DEMAND

The overwhelming weight of research discloses that cigarette brand advertising does not influence the "primary demand" for cigarettes -- that is, it does not convert non-smokers into smokers, encourage current smokers to smoke more or discourage smokers from quitting. The impact of cigarette advertising is on "secondary demand" -- that is, it may influence the particular brand that a consumer chooses without affecting overall demand for cigarettes.

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Several investigations have reached the conclusion that cigarette advertising does not increase primary demand for cigarettes. Hamilton (1972) examined a time-series model of cigarette consumption using data involving the U.S. market between 1925-70. Advertising was measured by an index of per capita advertising expenditures. Advertising failed to exert a statistically significant effect in any of the dozen models tested by the author.

Schmalensee (1972) tested 72 models of aggregate cigarette demand within the U.S. market for the period 1953-67. Taking all of the model results into account, he concluded that the evidence was not sufficient for him to conclude that advertising had any effect on primary demand.

Schneider et al. (1981) examined a time-series model of cigarette consumption using data for the U.S. market between 1930-78. Again, advertising did not have a statistically significant effect. The authors concluded: "Given the trivial effect of advertising on aggregate cigarette consumption, governmental prohibition of broadcast cigarette advertising could not have had any significant effect in terms of reducing demand" (p. 610).

Baltagi and Levin (1986) tested several time-series models of cigarette consumption using data involving 46 states in the U.S. over the period 1963-80. These models estimated per capita cigarette consumption as a function of cigarette prices,

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per capita disposable income and per capita advertising (television and radio only) expenditures. Analysis revealed "an insignificant effect of advertising on the consumption of cigarettes" (p. 152).

In my opinion, existing empirical evidence thus does not support the proposition that cigarette advertising increases cigarette consumption.[1] And the apparent ineffectiveness of cigarette advertising in stimulating primary demand is not unique to this particular product. Peles (1971) did not find advertising to influence primary demand for beer. Similarly, Bourgeois and Barnes (1979) report that neither print nor broadcast advertising expenditures were significantly related to alcoholic beverage consumption in Canada. Kyle (1982), reaching a similar conclusion in a study of food, clothing,

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[1] Only one such study (Lewit et al. (1981)) purports to find a significant relationship between cigarette advertising and primary demand in the United States. But this conclusion was based on questionable inferences drawn from the fact that smokers reported that they watched more television than non-smokers. Three studies support the advertising-consumption relationship in foreign markets. But one of those studies (Leeflang and Reuijl (1985)) was a study of the West German market during a period in which radio and television advertising was utilized; a second study (McGuinness and Cowling (1975)), covering both press and television in the United Kingdom, has been criticized on a variety of grounds and an analysis of the data for the same period (Johnston 1980) shows that the relationship is considerably weaker than McGuinness and Cowling reported. More important, Kyle (1982) analyzed United Kingdom 1963-78 data and found that, when spurious causes of consumption changes (e.g., seasonality) were excluded, advertising and primary demand were not related. The same spurious causes also may have biased the conclusions of Leeflang and Reuijl above, as well as the third study supporting an advertising-consumption relationship Radfar (1985), which echoes the conclusions of McGuinness and Cowling.

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alcohol and motor vehicles, dismissed as a "myth" the view that advertising increases market size. See also Sturges (1982) and Ashley et al. (1981).

III. EFFECT OF AD BANS IN OTHER COUNTRIES

Several countries have banned or severely restricted advertising. These countries include Italy, Singapore, Norway, Finland, Sweden, Iceland, Thailand, Taiwan and, to a limited degree, France. The evidence from these countries shows that cigarette advertising bans do no affect cigarette consumption trends.[1]

ITALY. Italy is the free market country with the longest experience with a ban on cigarette advertising, having enacted a ban on all forms of advertising in 1962. Although there have been limited periods during which the ban was not completely enforced, annual cigarette consumption more than doubled between 1960 to 1984, rising from 50 billion to over 104 billion cigarettes. On a per capita basis, consumption rose 82% during this period, from 1,306 units per adult in 1960 to 2,371 units per adult in 1984.

SINGAPORE. Although a small country, Singapore is one of the most sophisticated and advanced in economic and social institutions. Since a ban on most forms of tobacco

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[1] Underlying data for this discussion is from Int'l Advertising Ass'n, Tobacco Advertising Bans and Consumption in 16 Countries (J.J. Boddewyn 2d ed. 1986).

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advertising was imposed in 1970, total cigarette consumption increased from 2.8 billion to 4 billion in 1984. In spite of the fact that per capita consumption had declined prior to the ban, and in the face of significant price increases following the ban, cigarette consumption increased 12% during this period -- from 1,948 cigarettes per adult in 1970 to 2,189 cigarettes per adult in 1984.

SCANDINAVIA. Finland imposed a complete and effective ban on tobacco advertising in 1978. Prior to that time, per capita cigarette consumption had declined 9% between 1970 and 1978. Since the ban, however, per capita consumption has grown 10.6%. Total cigarette consumption, which grew only marginally in the years prior to the ban, has grown at the faster rate of 1.6% annually since 1977.

Norway imposed a complete and effective cigarette advertising ban in 1975. While per capita consumption among Norwegian males declined between 1974 and 1984, this decline continued a trend apparent before the ban. Per capita consumption among women smokers showed no significant change between 1974 and 1984.

In Sweden, where some forms of cigarette advertising are permitted, cigarette consumption per capita declined from 2,321 units in 1975 to 2,226 units by 1984.[1] Notably, during

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[1] The 1984 figure is somewhat overstated because it includes some border sales to Norwegians.

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this period the percent of adult smokers in the population dropped from 37% to about 30%.

There is an interesting by-product of cigarette limited advertising bans revealed in data from the three Scandinavian countries. Prohibiting cigarette advertising appears to retard the growth of market share among lower-tar brands of cigarettes. While Sweden, Norway and Finland all had essentially no lower-tar (below 15 mg) sales in 1970, Sweden (where limited advertising is allowed) had 52% sales of lower-"tar" cigarettes in 1984, in contrast to the share of 31% in Norway and 38% in Finland.

OTHER COUNTRIES. Analysis of data from other countries that have banned cigarette advertising is unequivocal. There is no evidence that banning advertising curtails consumption.

Taiwan has banned all tobacco advertising for many years and the government controls cigarette manufacture and distribution tightly through a state-controlled organization. Both total sales and per capital consumption have grown steadily -- from 1,065 units per capita in 1970 to 1,702 units per capita in 1984 -- without any advertising of cigarettes. Thailand has banned almost all forms of tobacco advertising since 1969 but per capita consumption is today higher (599 units) than when the ban was imposed (415 units). Iceland imposed a complete ban effective 1972 but total cigarette consumption has grown significantly faster since the ban was

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imposed than before it and per capita consumption has also grown, although not as rapidly. France has prohibited most types of advertising since 1976 and although consumption has dropped in some years since the ban, this can be attributed mostly to the maturity of the market in France rather than the ban.[1]

Conclusion

Any belief that banning cigarette advertising will curtail consumption of cigarettes is wishful thinking, not a conclusion that can be supported by the facts and actual experiences of those countries that have enacted such laws. The experience with bans and non-bans in countries other than the United States provides no support for legislation in the United States that would ban advertising. The data from other countries leads to the conclusion that other factors (market structure, product availability and price, social norms, health issue publicity, etc.) must be considered the underlying determinants of demand -- not advertising bans.

After examining such data, Dr. R. Lawson concluded that "the prime result of such restrictions on the advertising and labelling of tobacco products may well be restraint on competition rather than further consumer protection. There is no evidence to show that such restrictions have any impact on

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[1] "Where Cigarette Smoking Rises Without Advertising," World Tobacco 71-75, at 75 (April 1981).

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the reduction of cigarette smoking. . . . Instead, advertising restrictions place severe barriers to newcomers who wish to enter the market, while existing brand leaders maintain their position at less cost. In turn, this will make smoking a cheaper occupation, will encourage more to take it up."

Thus, my basic conclusion is that the proposed tobacco product advertising ban, like the restrictions that have been proposed that are close to or tantamount to a ban, will not be effective. Indeed, such measures are likely to have consequences directly contrary to those desired by the measures' sponsors.

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Statement of Scott Ward, Ph.D.

Professor of Marketing

The Wharton School
University of Pennsylvania
Philadelphia, Pa.

August 1, 1986

My name is Scott Ward. I am Professor of Marketing at the Wharton School at the University of Pennsylvania. I have published extensively in the field of marketing. My writings include articles in scholarly journals and several books. These include Problems in Marketing (5th ed. 1981), the most widely-used marketing management casebook, as well as Consumer Behavior (1984), How Children Learn To Buy (1977), and Consumer Behavior: Theoretical Sources (1973).

I serve on the editorial boards of the Journal of Consumer Research and the Journal of Advertising Research and have directed major grants from the National Science Foundation, National Institute of Mental Health, Ford Foundation and CBS, Inc. I have spent a significant part of my time during the past ten years studying children's reactions to advertising. This work has been funded by a number of federal agencies, including the Office of Child Development and the National Institute of Mental Health, as well as by private industry. In the late 1970s, I was engaged in government-sponsored research to improve drug-abuse prevention advertising. I have consulted with a number of major corporations, including AT&T, General

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Motors, Hershey Foods Corporation, Paine-Webber, Quaker Oats and others.

My testimony today responds to the various proposals that have been made to ban or further restrict tobacco product advertising. Those who are promoting such measures have stated that their ultimate goal is to get people to stop smoking. I am convinced, however, that the advertising measures that have been proposed would be ineffective. The imposition of a ban or additional restrictions on cigarette advertising also would mark an omnious turn in the federal government's general approach to advertising regulation, placing the government in the role of censor rather than the sponsor of additional information.

My testimony, which considers the aim and effect of advertising in "mature" product markets,[1] covers four broad subjects.

First, I will discuss the distinction between "new" and "mature" product markets. The primary role of advertising in "new" product markets is to make people aware of the existence of a product category, to inform potential consumers of its attributes and to interest them in a specific brand.

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[1] The general functions of advertising are discussed in many texts, including P. Farris & J. Quelch, Advertising & Promotion Management (1983); K. Roman & J. Maas, How To Advertise (1976) D. Aaker & J. Myers, Advertising Management (2d ed. 1982); Advertising Management (D. Aaker ed. 1975); D. Oglivy, Confessions of an Advertising Man (1964); and M. Ray, Advertising and Communication Management (1982).

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By contrast, in "mature" product categories there are few first-time buyers or non-buyers who are unaware of the category's existence. Consequently, the primary role of advertising in "mature" product markets is to keep consumers loyal to the particular brand being advertised or to prompt consumers to switch to the brand being advertised.

Second, I will discuss the two primary objectives of advertising in "mature" product markets -- to get consumers to notice the advertiser's message about his brand, and to generate the most favorable possible impression about that brand with the largest number of consumers. Getting consumers to notice the advertiser's message is no small challenge in today's cluttered media; the use of colorful, eye-catching visuals and slogans is essential. And, when competing brands cannot be distinguished from one another on the basis of objective differences, creating the most memorable impression among the largest number of consumers typically involves appealing to discrete consumer blocs and also often requires relatively large advertising expenditures.

Third, I will discuss consumer response to advertising. Many of those who favor banning or further restricting tobacco product advertising greatly overestimate the power of advertising and underestimate the basic intelligence and will of consumers. Consumers fail even to notice the vast majority of the advertising to which they are exposed, and even when they do notice it, advertising operates as a two-way process

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in which the consumer evaluates and often discounts the advertising, based upon the consumer's preexisting attitudes, beliefs and experiences. This principle would apply with special force in the case of cigarette advertising, where "counter-arguments" (i.e., the Surgeon General's warnings) are made an explicit part of the commercial message.

Fourth, I will touch briefly on the influence of advertising on children and teenagers. Drs. Blackwell and Boddewyn explore the subject in greater detail in their testimony, and I venture here only to supplement their testimony with a few observations of my own.

1. The Distinction Between "New" and "Mature" Product Markets

Underlying the proposals to ban or further restrict tobacco product advertising is an apparent lack of awareness of what cigarette advertising really involves. Proponents of such measures treat cigarette advertising as though cigarettes were a new product and advertising were required to make its existence known, or as though cigarettes as a product category were competing against other product categories and needed advertising to maintain or expand aggregate demand. Both of these views of advertising for cigarettes -- a "mature" product category -- are mistaken.

It is a truism that companies -- including cigarette companies -- use advertising to promote the sale of their products. But advertising serves vastly different functions depending on whether the product being advertised is "new" or

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"mature," and depending on whether the product category is in competition with other product categories.[1] In the case of a "new" product -- recent examples would include video cassette recorders, personal computers and cellular telephones -- advertising attempts to inform people about product attributes and benefits. Because the product category is new, advertising (together with information disseminated through other sources) is the means by which consumers learn that the product category exists and how it might be useful to them. At this stage, advertising promotes demand for the product category in the course of promoting demand for particular brands -- although all advertisers ultimately are interested in promoting their brands against competitive brands.

As awareness of the product category spreads, advertising matters less and less in stimulating aggregate demand. In fact, demand flattens because there are few people who have not either tried the product (and become settled users or non-users) or decided that they have no interest in the product category. Consumers no longer need advertising to appreciate

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[1] For discussion of the concept of "product life cycle," and the role of promotion for mature product categories, see C. Wasson, Dynamic Competitive Strategy and Product Life Cycles (1978); R. Polli & V. Cook, "Validity of the Product Life Cycle," Journal of Business (Oct. 1969); R. Buzzell, "Competitive Behavior and Product Life Cycles," in New Ideas for Successful Marketing (J. Wright & J. Goldstucker eds. 1966); R. Hammermesh & S. Silk, "How to Compete in Stagnant Industries," Harvard Business Review (Sept.-Oct. 1979); J. Swan & D. Rink, "Fitting Marketing Strategy to Varying Product Life Cycles," Business Horizons (Jan.-Feb. 1982); and Y. Wind, Product Policy: Concepts, Methods and Strategy (1982).

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the miracle of home video, soft drinks or laundry detergent. These products have become, or are becoming, a part of everyday life for those consumers who are likely to want them. The aim and effect of advertising for such "mature" product categories is to promote particular brands of the product, not to promote the product category itself. Many studies have found that advertising in such markets is not significantly related to aggregate product demand.[1]

There is an exception to this rule. Even after a product category has "matured" and advertising is no longer necessary to create awareness of the product, the product category may be in direct competition with other product categories. Electricity competes in many areas with natural gas. Milk competes with soft-drinks and other beverages. In such cases, it is not uncommon to see advertisements that promote a product

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[1] For example, a 1976 survey of ten product categories identified four categories in which advertising and primary demand were related. But those four markets each were in the early stage of the product's "life cycle." Cigarettes were one of the remaining six product categories in which primary demand was found to be unrelated to advertising. J. Lambin, "Advertising, Competition, and Market Conduct," in Oligopoly Over Time (1976). See also R. Ball & R. Agarwalda, "An Econometric Analysis of the Effects of Generic Advertising on the Demand for Tea in the UK," British Journal of Marketing, vol. 4 (1969); K. Palda, The Measurement of Cumulative Advertising Effects (1964); and L. Telser, "Advertising and Cigarettes," Journal of Political Economy, vol. 70 (1962). An excellent review of these and other studies may be found in D. Aaker & J. Carman, "Are you Overadvertising? A Review of Advertising-Sales Studies," Journal of Advertising Research, vol. 22, no. 4 (Aug.-Sept. 1982).

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category rather than a particular product brand. But cigarettes, like laundry detergents, are not in competition with other product categories, and you will never see an advertisement promoting cigarettes or laundry detergent as such. What you see exclusively are advertisements promoting particular brands of cigarettes or laundry detergent.

2. The Primary Objectives of Advertising in "Mature" Product Markets

In promoting a brand within a mature product market, an advertiser immediately encounters two challenges -- selecting a consumer to whom to promote the brand and getting the attention of that consumer. Meeting these two challenges accounts for the content of such advertising. Although selecting a target audience is a step that logically must be taken before figuring out how to attract attention, there are certain principles that govern regardless of the audience chosen. I therefore turn first to the challenge of reaching the consumer.

(a) Attracting Viewer Attention

Advertisers typically use attractive models in attractive settings to promote their products. Attractive men and women are used to sell brands of everything from floor polish to mouthwash, and in doing so advertisers are not attempting to persuade consumers that scrubbing floors or gargling is attractive. The goal is to catch the viewer's attention for the advertised brand.

Studies have documented the fact that consumers are potentially exposed to hundreds of advertisements and promotions

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each day. On television, at least 20 minutes of each broadcast hour are consumed by commercials, and advertisements account for more pages than text in most newspapers and magazines.

The result is "commercial clutter."[1] Numerous studies demonstrate that various measures of advertising effectiveness -- such as recall and positive attitudes -- decrease as the amount of "clutter" increases in the media environment. Viewer attention is a limited resource, and advertisers intensely compete for it.

The advertiser who offers the most arresting image reaps the reward of a viewer's momentary focus and has a chance to "speak" to the viewer. The image offered to catch the viewer's eye does not need to bear any special relation to the product being advertised. Attractive models such as Cliff Robertson (for AT&T) and Suzanne Sommers (for Ace Hardware) are cases in point. There certainly is nothing dishonest or deceptive in using the most effective means available to get a message noticed.

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[1] See M. Schudson, Advertising, The Uneasy Persuasion: Its Dubious Impact on American Society 107-08 (1984); M. Ray & P. Webb, "Experimental Research on the Effects of Television Clutter: Dealing with a Difficult Media Environment," in Marketing Science Institute, Research Report # 76-102 (1976); P. Webb, "Consumer Initial Processing in Difficult Media Environment," Journal of Consumer Research, vol. 6, no. 4 (1979); P. Webb & M. Ray, "Effects of TV Clutter," Journal of Advertising Research," vol. 9 no. 3 (1970); and C. Cobb, "Television Clutter and Advertising Effectiveness," in American Marketing Association Proceedings (1985).

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(b) Audience Segmentation

In "mature" product markets, as discussed, advertising promotes particular brands rather than the product category itself. Broadly speaking, an advertiser can promote a particular brand in either of two ways -- by pointing to objective characteristics of the brand that make that brand superior to other brands, or by identifying the brand subjectively as the brand that is desirable for members of discrete consumer blocs.[1]

There are many product categories in which an advertiser can point to objective characteristics of a brand that distinguishes that brand from competing brands. One make of automobile may have better mileage or require fewer repairs than another, and of course automobiles vary dramatically in price. Similarly, laboratory studies may in fact show that some antacids work faster and more effectively than others. When such objective characteristics allow an advertiser to distinguish his brand from others, the advertiser is likely to stress those characteristics in the advertising.

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[1] The prevalence of market segmentation in marketing practices is reflected in P. Kotler, Marketing Management: Analysis, Planning and Control (5th ed. 1984); J. Engel, H. Fiorillo & M. Cayley, Market Segmentation: Concepts and Applications (1972); D. Yankelovich, "New Criteria for Market Segmentation," Harvard Business Review (March-April 1964); J. Plummer, "Life Style Patterns: New Constraint for Mass Communication Research," Journal of Broadcasting (Winter 1971-72); W. Smith, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," Journal of Marketing (July 1956); and A. Roberts, "Applying the Strategy of Market Segmentation," Business Horizons (Fall 1961).

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In other product categories, however, brands are more or less interchangeable in "objective" terms. With cigarettes, for example, there are some objective brand characteristics to which an advertiser can point -- the "tar" and nicotine content of a particular brand, its type of filter, taste or length. But cigarette brands, like soft-drinks and soaps, are far more difficult to distinguish from one another on the basis of such objective characteristics than are product brands in many other mature product categories.

An advertiser attempting to promote a brand that is not objectively distinguishable from other brands therefore tries a different approach. He aims to promote his brand with particular groups of consumers by saying, in effect, "If you are this kind of consumer, Brand X is for you; if you are that kind of consumer, Brand Y is for you." The advertiser, in other words, chooses a particular consumer group at which to aim his message and tailors his message in a way that will strike a responsive chord with that group.

People in our society cluster in "taste cultures,"[1] and it is at these groupings that advertisers direct their messages -- particularly in mature product categories in which objective differentiation of the constituent product brands is difficult. The time is long past when advertisers treated the

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[1] W. Leiss, S. Kline & S. Jhally, Social Communication in Advertising: Persons, Products, and Images of Well-Being 3 (1986).

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public as an undifferentiated mass. That approach simply is not cost-effective, and it is particularly inefficient when many interchangeable brands of a product are competing for a share of the market.

Many cigarette advertisements depict attractive people. But that is about the only generalization that one can make. Sometimes the people portrayed are rugged, outdoor types; sometimes they are rich and sophisticated; sometimes they are confirmed individualists; sometimes they are emphatically sociable creatures. The various cigarette manufacturers, like advertisers of soaps and colognes, attempt to attract the attention of each of these target audiences. Thus, it is not the advertisement that "shapes" the consumer; it is the consumer (that is, those in the target audience who already smoke) that "shapes" the advertisement.

To be sure, cigarette advertising, like other advertising, seeks to portray the brand being advertised in a "positive" manner. But for those who smoke, smoking <u>is</u> a pleasurable activity. There is nothing deceptive about the depiction. In targeting their advertising at particular audiences, and in seeking to gain their attention and preference, cigarette manufacturers are doing exactly what other advertisers do -- and must do -- to engage in brand competition.

3. <u>Consumer Response to Advertising</u>

As discussed above, proponents of banning or further restricting tobacco product advertising overestimate the power

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of advertising. Correspondingly, they underestimate the intelligence and will of the target audiences. Their view of consumers is actually a view that prevailed in advertising theory earlier in this century -- a view that has been supplanted by a view that gives consumers far more credit, and far more control over their own power of choice.

It used to be thought that advertising (indeed, all mass communications) had a direct and powerful effect on consumers. Advertisers would say, "Buy Brand X because it is superior to Brand Y," and if the advertisement were cleverly enough executed the consumer would buy the advertised brand. But the real world does not and never did operate in the way portrayed in this "one-way flow" model. Advertisers soon realized that simply disseminating a commercial message does not ensure that it will be noticed. They also came to learn that, even when noticed, commercial messages are not necessarily retained, and that even when viewers find a particular advertisement memorable, they do not always remember what product brand was being advertised.[1] Moreover, even when consumers do remember an advertisement, as well as the name of

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[1] These points are discussed in M. Ray, Advertising and Communication Management (1982). Other discussions of early models of advertising and promotion effects include W. Schramm, "Channels and Audiences," in Handbook of Communication (I. dePool et al. eds. 1973); H. Laswell, "The Structure and Function of Communication in Society," in Communication of Ideas (L. Bryson ed. 1948); R. Bauer & A. Bauer, "America, Mass Society and Mass Media," Journal of Social Issues, vol. 16 (1960); R. Bauer, "The Initiative of the Audience," Journal of Advertising Research, vol. 3, no. 2, (1963); and T. Robertson, J. Zielinski & S. Ward, Consumer Behavior (1984).

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the advertised brand, there is no guarantee that they will have any interest in buying the product.

Only part of the problem can be traced to "commercial clutter." Additionally, the failure of advertising to get consumers to behave like Pavlovian dogs stems from the fact that people are not hapless recipients of advertising. Rather, they are -- when they notice the advertising at all -- active participants who ignore, selectively attend to, laugh, counter argue, forget or just say "no." The distinguished psychologist, Raymond Bauer, put it this way 20 years ago:

> "The time may well be at hand to revise the traditional communications formula, 'who does what, with which, and to whom.' The suggested revision is that we view communications as a transactional process in which both audience and communicator take important initiative. A successful communication is usually a good 'deal' in which each party gives and takes in some pattern that is acceptable to him."[1]

Bauer's "transactional" model suggests what should today be obvious on reflection -- that audiences are comprised of individuals who are not blank slates or maleable putty. Individual audience members are the sum of myriad experiences and beliefs who evaluate commercial messages not in a vacuum but in the context of their lives.[2]

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[1] R. Bauer, "The Initiative of the Audience," Journal of Advertising Research, vol. 3, no. 2 (1963).

[2] Contemporary models of marketing communications are found in advertising text and trade books, such as those cited at

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Part of my own research, for example, has sought to assist government agencies develop more effective drug-abuse prevention promotions. In testing such promotions, we found that parents and teenagers often engaged in mental "counter-argument" when watching particular anti-drug promotions. One promotion showed parents arguing violently with their teenage son about drugs. The message stimulated many parents to think to themselves while watching this promotion, "Parents shouldn't do that; we wouldn't do that."

Counter-arguments are a pervasive part of the exchange between advertiser and consumer. You may resist the most appealing advertisement for a fast-food chain because you are on a diet or do not like "junk" food. You may resist a clever advertisement for a domestic automobile because you trust reports that foreign-made cars are more reliable. You may decide against chewing gum -- despite the young surfers and sexy blondes who inhabit gum advertisements -- because you think that chewing gum is disgusting or unattractive.

This kind of counter-argument goes on all the time, most often in the form of an internalized debate. What is striking about the counter-argumentation that occurs in the

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(footnote cont'd)

page 12, note 1, above. See also M. Ray, "Marketing Communication and the Hierarchy of Effects," in New Models for Mass Communication Research (P. Clark ed. 1973); and W. McGuire, "An Information Processing Model of Advertising Effectiveness," in Behavioral and Management Sciences in Marketing (H. Davis & A. Silk eds. 1978).

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case of cigarettes is that the viewer is not allowed to miss the counter-argument. Cigarette advertising carries the Surgeon General's rotating messages. Indeed, the antitobacco point of view is one of the most widely disseminated consumer messages.

4. The Influence of Advertising

Those who favor banning or restricting tobacco product advertising assert that such advertising influences adult smokers to continue smoking and causes children and teenagers to decide to smoke. In fact, the available evidence indicates that advertising is among the least influential factors involved -- certainly not influential enough to warrant an advertising ban, even if we agreed that it is proper for the government to try to manipulate consumer behavior by suppressing information.

So far as young people are concerned, I share the view of the Director of the National Institute of Child Health and Human Development, who testified before this Subcommittee only three years ago that "[t]he most forceful determinants of smoking are parents, peers, and older siblings." That observation is in accord with the results of my own research with pre-teenage children, which indicates that parents and peers are much more important determinants of children's developing consumer behavior patterns than advertising.[1]

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[1] S. Ward, D. Wackman & E. Wartella, How Children Learn To Buy: The Development of Consumer Information-Processing Skills (1979).

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Among teenagers, data gathered for the American Cancer Society by Lieberman Research, Inc., suggest that, as early as 1969, "a large majority of youngsters oppose[d] cigarette smoking and recognize[d] it as a cause of cancer" (p. 23). The ACS study concluded that "[p]ersons in the environment are clearly very important in shaping smoking behavior: Where parents or other frequently seen adults smoke, youngsters are more likely to take up the habit. * * * Most influential of all seem to be friends" (pp. 29-30).

This early ACS report concluded that smoking "seems firmly established in only a small minority of teenagers." Perhaps that finding best encapsulates the point: Most teenagers choose not to smoke, responding to the positive and negative influences in a manner that should satisfy antitobacco advocates. My own study of over 600 children and their parents demonstrated that even young children can and do develop skills to evaluate advertising.

5. Conclusion.

My purpose has been to explain the cigarette advertising that we see. Cigarette advertisers, like other advertisers of mature products, seek to break through advertising "clutter" and attract the attention of smokers -- obviously, no small task. They attempt to do so by identifying target audiences of smokers, and creating advertising that will be noticed by those target audiences. The ultimate objective is

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to prompt a shift in brand loyalties or to defend the advertised brand against the brand shifts that may be prompted by competitive advertising.

Banning or eliminating tobacco product advertising simply would remove a vehicle of brand competition. But it would not reduce tobacco product use or prevent people, including some young people, from deciding to smoke in the first place. Such measures would, however, introduce into government regulation of advertising a dangerous paternalism that has no precedent and no limiting principle. The government traditionally has been in the business of keeping commercial messages truthful -- not attempting to manipulate consumer behavior by closing off advertising, but assuring that such behavior is fully informed. The proposals before you today represent a fundamental departure from that approach.

Rather than ignoring the limits of advertising in an effort to justify a ban on cigarette advertising, government programs concerning smoking should be based on respect for and acknowledgment of the intelligence, will and complexities of individuals. That requires, among other things, careful pretesting of any mass communications to make sure that they are effective and not counter-productive and taking advantage of the essential role played by parents, peers and others in the decision to smoke. That clearly was the lesson that emerged from my work with the government in designing better drug abuse programs. The lesson applies here as well.

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WHY DO JUVENILES START SMOKING?

AN INTERNATIONAL STUDY OF THE ROLE OF ADVERTISING & OTHER CONTRIBUTORY FACTORS IN AUSTRALIA, HONG KONG, NORWAY, SPAIN & THE UNITED KINGDOM

Edited and Introduced by:

PROFESSOR J.J. BODDEWYN, Ph. D
Baruch College, City University of New York

iaa
INTERNATIONAL ADVERTISING ASSOCIATION INC.

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PREFACE

The IAA is most interested in the effects of advertising on children, a so-called vulnerable group. For this reason, we publish this study as a valuable addition to the literature. It is based on very careful research by a most qualified organization employing methodology which we have examined thoroughly and found to be of the highest standards. It is also research which has generated a comparable international data base.

The IAA believes in the freedom to advertise all products and services which are legally sold and legally consumed. Further, the IAA believes that this freedom is indivisible in the sense that restrictions applied to one group of products inevitably lead to erosion of the freedom to advertise other products.

These beliefs led us to publish "Tobacco Advertising Bans and Consumption in 16 Countries" (in 1983 and 1986), which clearly showed that the implementation of advertising bans was generally not followed by decreases in overall tobacco consumption.

It would be convenient for those against advertising to indict it as a main cause in how and why people buy and consume products. But advertising is only one of many variables affecting consumer choices.

This five-nation study bears on all of these issues and should be an important addition to a growing literature on them.

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1. EDITOR'S INTRODUCTION

Whether tobacco advertising affects overall tobacco consumption is a complex problem. The bulk of research on this topic points to little or no relationship between the two. A subset of this issue concerns the impact of cigarette advertising on smoking initiation by the young: do juveniles start to smoke because they have been exposed to print and broadcast advertisements?

Important Evidence

The 5-country study reported here provides strong evidence that *advertising plays a miniscule role in the initiation of smoking by the young.* Instead, parents, siblings and friends appear to be the determining factors when children start to smoke.

New Evidence

Such a point has been made and proved before. However, this recent study (1984-1986) provides not only corroborative evidence but also a new angle by focussing on five countries where the control of cigarette advertising ranges from a ban (**Norway**) to rather limited restrictions (**Hong Kong** and **Spain**), with **Australia** and the **United Kingdom** standing in between.

It establishes that family and peer influences appear to be the determining factors, irrespective of whether the young are exposed to cigarette advertising or not, with all five countries reporting the similar impact of social influences on juvenile smoking initiation.

New Methodology

This study also breaks new methodological ground in that, for the first time, an established Smoking Prevalence Estimator has been applied *internationally* to produce a comparable measure among countries with differing tobacco-advertising controls.

Besides, instead of using diaries or impersonal questionnaires administered at school, as is common in this field, the present survey used *personal interviews* conducted at home. Again, this is a first international methodological breakthrough which has generated a comparable international database about juvenile smoking initiation.

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Finally, *a far broader age range (7 to 15/16 years old) of respondents* were interviewed than in most other studies in order to provide a more comprehensive understanding of the factors involved.

Implications

Such findings would seem to challenge the validity of fairly common assertions that the young start to smoke because they have been exposed to cigarette advertising. They also raise questions about the effectiveness of tobacco-advertising bans.(*) The fact that Norway has had such a complete ban since 1975, yet retains relatively high proportions of adult and juvenile smokers, clearly points to other factors.

Is the Evidence Believable?

This study was initiated and financed by the tobacco industry. No one should question its right to engage in research, any more than research by the antismoking movement should be considered suspicious a priori. The test, instead, should be: "Is it good research?"

The findings reported here were provided by the London-based Children's Research Unit (CRU), which is an experienced research house that has been employed by both business and government (see Appendix A). CRU relied in part on the methods and findings of studies commissioned by the British Government in 1982 and 1984, but it also drew on its own extensive international research experience to improve on the British Government study's methodology, as was explained above (Appendices B and C detail the research methodology used in the five country studies).

I think that the methodology used by CRU was appropriate and that the findings are credible — after all, other studies have reached similar conclusions — but the reader should reach his or her own conclusions. In any case, the new data presented here, collected internationally and in a comparable manner, are now available for discussing the issue of juvenile smoking initiation.

Limitations

It may be objected that this study has reduced cultural differences among the five countries to a single factor, namely, the differences among national tobacco-advertising controls. This is not quite correct since there are references to cultural habits — particularly in **Hong Kong** and **Spain**. However, even if this criticism is valid and we need further studies of the role of other

(*) See, for example: *Tobacco Advertising Bans and Consumption in 16 Countries*. New York: International Advertising Association, 1986.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

cultural factors in the initiation of smoking by the young, *this very requirement also applies to those who advocate cigarette-advertising bans and other restrictions all over the world.* They too ignore or downplay the varying impacts of cultural values and customs when they propose the same solutions — bans and restrictions — everywhere.

The findings reported here deal mainly with juvenile smoking initiation, and do not investigate factors accounting for the continuation of smoking behaviour. Only additional research can explain the latter but, meanwhile, the Children's Research Unit's study can be considered to have thoroughly investigated factors influencing the initiation of smoking by youngsters on a cross-national basis.

In my editorial role, I have asked the authors of this report to clarify their methods and findings, and to limit their interpretations to what can be reasonably inferred from the data. As such, the following study provides valuable evidence for researchers, policy-makers, advertising practitioners and concerned citizens.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

2. THE ISSUE

There is a growing body of *national* studies identifying factors accounting for "juvenile smoking initiation," that is, the conditions and motivations associated with children starting to smoke (see Appendix G for a review of that literature). Besides, whether substantiated or not, there is a fairly widespread belief around the world that advertising constitutes a major factor in this initiation process. In contrast, there has been a lack of systematic *cross-national* research to compare juvenile smoking initiation under different country conditions.

Nations, of course, vary considerably in such factors as values, economic development, political systems and social stratification. Controlling for all of these factors is a daunting task indeed for any researcher. However, considering that one common remedy has been proposed to combat juvenile smoking, namely, to ban or severely restrict tobacco advertising, it was highly desirable *to compare countries that differ significantly in terms of public policies toward tobacco advertising, in order to determine the relative impact of tobacco advertising on why juveniles start smoking.*

To this end, the tobacco industry's international information organisation (INFOTAB) commissioned the Children's Research Unit (CRU — see Appendix A) to determine the extent to which tobacco advertising influenced *juvenile smoking initiation* in a sample of countries selected for their different regulatory systems regarding the advertising of tobacco products (see Appendix F for further details about these systems).

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

3. BASIC RESEARCH APPROACH

The programme of research reported here has involved independent research investigations in four countries, conducted during 1984 (**Australia**), 1985 (**Norway**) and 1986 (**Spain** and **Hong Kong**). This research programme has attempted to investigate comprehensively juvenile smoking initiation, with particular attention being given to the role of advertising.

Approximately 1000 interviews were conducted in each one of these four countries with male and female respondents aged 7-15/16 years, according to a quota sample. All interviews were conducted personally and in-home, with parental permission and the willing participation of the child (see Appendices C and E for further details).

First of all, it was important to apply a reliable estimator of smoking prevalence so that countries with varying policies towards tobacco advertising control could be meaningfully compared. CRU therefore decided to apply Bewley's Smoking Prevalence Estimator (see Appendix D), widely accepted in this field, throughout this international research project. Since the UK Office of Population Censuses and Surveys (OPCS) studies (Dobbs & Marsh 1, 2*) had also applied Bewley's modified estimator in 1982 and 1984, this enabled comparisons to be made between data from the **United Kingdom** (OPCS) and other countries (CRU studies).

Four countries were chosen as providing important comparisons in relation to the degree of media exposure allowed for tobacco advertising at the time of the survey:

1. **AUSTRALIA** was selected as having similar voluntary agreements to those in the **United Kingdom** as far as restrictions on tobacco advertising are concerned.
2. **NORWAY** was chosen because there has been a total ban on tobacco advertising in force since 1975.
3. **SPAIN** and
4. **HONG KONG** were selected to provide further contrasts in that tobacco advertising was permitted across all media in these two countries.

* The numbers in parentheses refer to entries in the Bibliography (Appendix H) at the end of this report.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

The UK OPCS studies provided the baseline essential for investigating **Australia, Norway, Spain** and **Hong Kong**, and the results from all five countries are considered here (Note: In the **United Kingdom** there were three separate studies which are treated here as one — see Appendices D and E).

The overall approach adopted in this report is to illustrate the picture which emerges from each national survey. It must be stressed, however, that "regular smokers" are always defined in the same way as children who smoke at least one cigarette every week, and that "children" always means children of comparable age, when this appears to be important (see Appendix D).

Against this background, this research report considers the national patterns of smoking, the ways in which smoking seems to start, and the part which advertising may play in this process, against the impact of the social and familial environments.

With a study of this complex nature, there are many possible analytical breakdowns of the statistics, such as boys versus girls, those who live in towns versus those who live in the country, and social and cultural factors. However, the purpose of the research was to examine differences among five countries; and the data is therefore presented here five ways by country of study, and within this, by smokers against non-smokers, and often by age as well. Further fragmentation would seem likely to bring confusion rather than enlightenment within the context of this report.

Further enquiries about this cross-national survey can be addressed to:

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cultural factors in the initiation of smoking by the young, *this very requirement also applies to those who advocate cigarette-advertising bans and other restrictions all over the world.* They too ignore or downplay the varying impacts of cultural values and customs when they propose the same solutions — bans and restrictions — everywhere.

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5. KEY FINDINGS

1. Table 1 reveals the proportions of 7-15 year old children smoking at all, which were found to be similar among the countries surveyed, the exception being **Hong Kong** where smoking was less common, despite the absence of almost all tobacco advertising controls in that country.

Table 1 OVERALL SMOKING BEHAVIOUR

INTERNATIONAL DATA - PERCENTAGES GIVING THIS ANSWER FROM FULL SAMPLE AGED 7-15 YEARS

	Australia (*)	Norway	Spain	Hong Kong
Total in numbers	998	998	1016	1003
Never	56%	54%	51%	90%
Once	23%	24%	34%	7%
Used to	9%	5%	6%	1%
Occasional	6%	5%	3%	–
Regular	5%	10%	4%	1%
No Answer	1%	2%	2%	1%

(*) 7-16 year olds were interviewed in Australia.

2. Where data are compared between 11-15 year-olds in all countries, including the UK/OPCS studies, these patterns remain constant, with the incidence in **Hong Kong** markedly lower than elsewhere (see Table 2).

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

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First of all, it was important to apply a reliable estimator of smoking prevalence so that countries with varying policies towards tobacco advertising control could be meaningfully compared. CRU therefore decided to apply Bewley's Smoking Prevalence Estimator (see Appendix D), widely accepted in this field, throughout this international research project. Since the UK Office of Population Censuses and Surveys (OPCS) studies (Dobbs & Marsh 1, 2*) had also applied Bewley's modified estimator in 1982 and 1984, this enabled comparisons to be made between data from the **United Kingdom** (OPCS) and other countries (CRU studies).

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

6. THE PREVALENCE OF SMOKING

In Tables 1 and 2, information is given for the total sample (7-15 years) and for 11-15 year-olds only, the latter being comparable with the **United Kingdom** surveys.

For 11-15 year-olds in every country, with the exception of **Hong Kong**, the position was similar: about half said that they had *never* smoked, and between one fifth and two fifths said that they had tried once and never again. Bearing in mind that it is between these two groups (those who had never smoked and those who had tried once and never again) that all **United Kingdom** adjustment was made (see Appendix D), three out of four children aged between 11 and 15 years had never smoked more than once.

On the other hand, in all countries, between less than one in ten and approximately one in seven — lowest in **Spain** (7%), highest in **Scotland** (16%) and **Norway** (13%) — said that they were now regular smokers, that is, smoked at least one cigarette a week (see Appendix D for a definition of "regular smoker").

Hong Kong, however, differs dramatically from all the other countries studied, in that the proportion of children who smoked — despite less stringent advertising controls than elsewhere — is *lower* than anywhere else, yet confirms almost all the remaining findings. In **Hong Kong**, only 3% of children aged 11-15 reported that they were regular smokers, against 85% who said that they had never even had a single puff.

Part of this difference is undoubtedly due to social factors. In **Hong Kong**, and nowhere else, there was a major variation between the smoking habits of boys and girls. Looking at all those who have ever smoked:

- In **England**, for every 100 boys, there were 95 girls who had ever smoked.
- In **Wales**, for every 100 boys, there were 102 girls who had ever smoked.
- In **Scotland**, for every 100 boys, there were 100 girls who had ever smoked.
- In **Australia**, for every 100 boys, there were 100 girls who had ever smoked.
- In **Norway**, for every 100 boys, there were 73 girls who had ever smoked.
- In **Spain**, for every 100 boys, there were 73 girls who had ever smoked.

But,

- In **Hong Kong**, for every 100 boys, there were 42 girls who had ever smoked.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

This sex difference is also reflected in the smoking habits of parents, as we shall soon see.

Naturally, there is a progression *upwards*, the older the child becomes. This increase is governed by a number of factors: as the child becomes older, adult aspirations and identification with adults increase, the child's peer group widens and includes peers with a greater variety of behaviour patterns, the child's mobility and spending power increase, and the age for legal purchase of the product approaches. Taking the two age extremes on which information is available in all countries (11 year-olds against 15 year-olds), we find the following patterns for those smoking one or more cigarettes a week:

SMOKING ONE OR MORE CIGARETTES A WEEK

	At 11	At 15
England	1%	28%
Wales	1	23
Scotland	3	32
Australia	1(*)	19
Norway	0	36
Spain	1	27
Hong Kong	0	11

(*) 11/12 year-olds.

It is worth noting the higher incidence of smoking in **Norway** where a tobacco-advertising ban has been in operation since 1975. **Hong Kong** has far fewer smokers at age 15, as does **Australia**. Even at 15, however, there is no country where children/young people have reached the smoking levels of their parents, as shown below:

	PERCENTAGES OF 15-YEAR-OLDS SMOKING	PERCENTAGES OF ALL CHILDREN SAMPLES REPORTING THAT THIS PARENT SMOKED(*)	
		Father	Mother
England	28%	44%	37%
Wales	23	47	43
Scotland	32	50	48
Australia	19	40	34
Norway	36	51	46
Spain	27	69	32
Hong Kong	11	44	4

(*)*11-15 year-olds in the* **United Kingdom**
7-16 year-olds in **Australia**
7-15 year-olds in **Hong Kong, Spain and Norway**

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

One final point: for the sake of simplicity in reporting these data, we have considered all smoking as equal, whether the number smoked per week is one or forty, or even more. The classifications used in all surveys allowed for this aspect, and more detailed breakdowns are shown in the following table:

	11-15 YEAR-OLDS : PERCENTAGES SMOKING THIS NUMBER OF CIGARETTES PER WEEK			TOTAL PERCENTAGES OF 11-15 YEAR-OLDS SMOKING
	1-6	**7-39**	**40+**	
England	3%	7%	3%	13%
Wales	3	6	2	11
Scotland	4	9	4	16
Australia	3	4	2	9
Norway	4	6	3	13
Spain	3	3	1	7

Note: **Hong Kong** figures were too low to be broken down.

Again, the similarity is obvious, except for **Spain**. In most countries, there are similar lower proportions at the two extremes — less than seven cigarettes a week, or more than forty. The middle-of-the-road group is usually about twice the size of either of these groups.

These findings suggest that, irrespective of advertising restrictions, the amount smoked in each country appears to be independent of the variation in advertising controls although one argument advanced for such government restrictions has been that they influence not the fact but the amount of smoking.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

7. THE DIRECT IMPACT OF ADVERTISING ON JUVENILE SMOKING INITIATION

The extent to which "outside messages" from the tobacco industry have made their mark on the young can only be considered against the smoking patterns described above. The four country surveys revealed that the major — indeed the overwhelming — influence on the start of smoking behaviour among young people was the related behaviour of friends and family, and that this is almost identical in all the countries studied.

In all surveys outside the **United Kingdom**, direct questions were asked about potential influences. In **Norway, Spain, Australia** and **Hong Kong**, children were shown a list of items which might have influenced them(*). Their answers with regard to what might have influenced them *most* are discussed in greater detail in the next section, but what is shown below are references to advertising as *prompted* responses (i.e. from a proposed list):

	PERCENTAGES IN THESE COUNTRIES SAYING THAT, IN STARTING TO SMOKE, ADVERTISING WAS:
	First Most Important Reason
Norway	0%
Spain	0
Hong Kong	1

In Australia, no boys and 1% of girls answered "advertising" in reply to a differently phrased but similar question (see bottom of Table 3 on page 16).

Few adults believe that they are ever directly influenced by advertising. However, there is a good deal of evidence (3, 4, 5, 6) that children are less likely to be coy or self-deceiving in this respect — certainly, in the case of many other products, they will happily admit to advertising pressure. In such a context — indeed even if we do assume that children are as reticent as adults —, the similar very low percentages reported in the above table imply little advertising influence, compared to other factors.

(*) Respondents were shown a list of possible reasons for starting to smoke (see Table 3 on page 16).

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

As this study concentrated on investigating tobacco issues, there was insufficient scope for similarly investigating other products such as alcohol and confectionery. However, in order to put the tobacco results into context, respondents were questioned about their brand awareness of cigarettes, alcohol and confectionery (interpreted respectively as "beer" and "chocolate"). The exception was **Australia** where advertising awareness about these other products was not covered. The findings were as follows:

- In **Norway** (where there is no advertising of cigarettes), 70% mentioned the leading brand of cigarette, against 71% who mentioned the leading brand of chocolate, and 77% the leading brand of beer.
- In **Spain**, the pattern was quite different, with 77% mentioning the leading brand of cigarette, 63% the leading brand of chocolate, and 49% the leading brand of beer.
- In **Hong Kong**, 77% mentioned the leading brand of cigarette, 87% the leading brand of chocolate, and 91% the leading brand of beer.
- In **Australia**, at least 87% said that they had seen cigarette advertising, but as the full Australian report comments: "Awareness, then, of cigarette advertising was high amongst all age groups. This finding essentially reflects children's awareness of many adult products — for example, kettles, soap powder, petfood, etc. — rather than a motivation to purchase these products."

In other words, brand awareness of cigarettes is quite high in all the countries surveyed, irrespective of whether advertising is allowed or not. This is also true regarding non-tobacco products and even those which the young do not use (for example, kettles, petfoods and detergents).

Other parts of this report suggest that such cigarette brand awareness is picked up from family, friends and other people when cigarette advertising is not allowed. However, the fact that cigarette brand awareness is high, even in countries with no advertising, is related to the industry's argument that the purpose of cigarette advertising is to induce brand switching — not just brand awareness which constitutes only the initial step, and can be generated through means other than advertising.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

8. STARTING TO SMOKE

The cross-national pattern is one of remarkable consistency in the proportion of children who smoke, and in the extent to which they smoke. However, what are the influences which seem to be at work in starting them to smoke? As CRU's research experience with children has shown them to be highly aware of brands and advertising in different markets, regardless of product usage, this international study set out to consider *children's own views* of the ways in which they came to smoke in the first place. The impact of advertising as an initiating factor was included in this framework.

The conclusions which emerge from this international survey will cause little surprise, at least in the central theme. On the one hand, there is the daredevil approach to the first puff; on the other, there is the influence of friends and schoolmates, and of family. They are largely "common-sensical" and corroborate several national studies (see Appendix G), although in a comparative and comparable manner, and in the context of varying degrees of tobacco advertising control.

In this research project, questions were asked on the circumstances of the first smoke. Results of "why" and "with whom" are given in Tables 3 and 4. Unfortunately, there are no UK data on "why," but a generally comparable question was asked in all countries outside the **United Kingdom**. For this purpose, a list of possible reasons was shown to all respondents to the CRU surveys, and a further one was asked on where the first cigarette was smoked.

In all countries, hardly surprisingly, among reasons given, "To see what it was like" came in first place, followed by variations on the theme of conformity (19% in **Australia** said that all their friends smoked; the same proportion in **Spain** said that someone gave them one) or of daredevilry (38% gave this answer in **Hong Kong**, 7% in **Australia** and 4% in **Norway**).

Greater interest probably lies in Table 4 which presents answers to the question: "With whom?" Certain cultural differences were apparent although detailed examination of these was not possible within the scope of the studies conducted. However, a couple of the most obvious differences can be explained by the fact that, in **Spain**, it is the local wedding custom for children to be given a quick puff of a cigarette, to indicate adulthood. This would account for the very different pattern in **Spain** — not merely the high proportion given cigarettes (referred to in the above paragraph), but also the far higher percentage (31%) who referred to a special occasion (see Table 3). This was a category added for **Spain** alone, and not enquired about elsewhere.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Table 3

STARTING TO SMOKE

ANSWERS GIVEN TO PROMPTED REASONS FOR STARTING TO SMOKE - FIRST MENTIONS

	United Kingdom	Australia (*) All Mentions	Norway(*)	Spain(*)	Hong Kong
		First Most Important Reason			
Total in numbers of those who have ever smoked	No Comparable Question	483	420	491	94
To see what it was like		78%	64%	35%	40%
All my friends smoked		19%	6%	5%	5%
Someone gave me one		18%	9%	19%	14%
For a dare		7%	4%	0%	38%
I just found one		5%	4%	0%	2%
I was bullied		4%	1%	1%	–
Parents made me		3%	N/A	N/A	N/A
I saw an advertisement		1%	0%	0%	1%
Because parents smoke		1%	N/A	N/A	N/A
Tried to look tough		N/A	11%	1%	1%
Tried to show off		N/A	2%	2%	–
Tried to look grown up		N/A	1%	3%	–
Special occasion		N/A	N/A	31%	N/A

(*) *Question Wordings:*

Australia : "Can you remember when you tried the first cigarette? Was it for any of these reasons?"

Norway, Spain and Hong Kong : "These are some (other) reasons that people have given us as to why they tried their first cigarette. I would like you to look through them and decide if any of them had any part in your trying a cigarette. Tell me which was the most important reason..."

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Table 4

STARTING TO SMOKE

OTHERS PRESENT AT TIME OF FIRST SMOKE(*)

	United Kingdom			Australia	Norway	Spain	Hong Kong
	England	Wales	Scotland				
Total in numbers of those who have ever smoked	2025	1328	1697	583	420	491	94
Friends	65%	71%	70%	54%	69%	29%	38%
Brother	7%	7%	4%	7%	4%	16%	11%
Sister	6%	5%	5%	8%	5%	14%	6%
Mother	3%	2%	3%	15%	14%	34%	9%
Father	4%	2%	2%	16%	12%	32%	18%
Others	6%	4%	5%	10%	–	33%	10%
Alone	9%	8%	8%	7%	8%	1%	27%
Can't remember	9%	7%	8%	–	1%	–	–
Percentage of mentions(**)	109%	106%	105%	117%	113%	159%	115%

Question wording in **United Kingdom**: "Who were you with, the first time you tried smoking a cigarette?" Almost identical wordings were used elsewhere, except that precoding allowed for "one friend" against "more than one friend."

(*) **United Kingdom** figures concern children aged 11 upwards; all others concern children from 7-years upwards. Technically, we are describing an event which took place at a specific age, and therefore this difference between the two age groups is irrelevant, although it seems very likely that the higher percentages mentioning father and mother outside the **United Kingdom** reflect more recent recall by younger smokers.

(**) Totals add up to more than 100% because several answers were allowed.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Similar variations spilled into answers given on environments and locations. Clearly, we would expect that the most common environment for the first puff would be with friends and peer groups: with one exception, this proved to be the case. The exception, once again, is **Spain** where "others in family", "father" and "mother" score more heavily, again stressing the special occasion already mentioned. However, in all countries whether "hole-in-the-corner" or flagrantly open, the first smoke with friends seems to be a form of initiation ceremony, something which makes the smoker more like an adult.

Table 4 has much more to tell us. Except in **Hong Kong**, less than one in ten youngsters first practised on their own; but a far higher proportion than this — between a fifth and just over a third — started in the company of someone in their family. Indeed, an additional question, asking where the child was at the time of first trial, shows that the proportions saying they started within their own home were as follows:

FIRST CIGARETTE TRIAL AT HOME

11-15 Years	
England	15%
Wales	12
Scotland	12
7-15 Years	
Australia (7-16 years)	38%
Norway	29
Spain	26(*)
Hong Kong	55

(*) "Special occasions" in Spain usually occur outside of the home.

Perhaps because of question wording or question positioning in the surveys (although reasons are not clear), **United Kingdom** figures are far lower than elsewhere, but still remain substantial.

All this clearly highlights the importance of parental attitudes. The UK Government/OPCS study conducted in 1984 by Dobbs and Marsh stated that: "A number of studies have suggested that the development of children's smoking experience is influenced by the smoking behaviour of their parents and siblings. The additional 1984 questionnaire therefore included a question about the smoking behaviour of pupils' families."

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

This 1984 OPCS study goes on to report the proportions of family smoking, and shows how they compare with other data. It then comments that: "The survey shows that pupils who smoked were more likely to live among smokers. In **England** and **Wales**, for example, only 18% of pupils who were regular smokers, and 22% who were occasional smokers, said that no one at home smoked, compared with 46% of pupils who have never smoked. The proportions of pupils whose fathers smoked rose from 39% of those who had never smoked, through 46% of those who had tried smoking once and 46% of those who used to smoke, to 50% of occasional smokers and 52% of regular smokers. The proportions of pupils with mothers, sisters or brothers who smoked followed a similar pattern: in each case, the proportion rose with the smoking experience of the pupils, sometimes substantially. For example, in **England** and **Wales**, only 7% of pupils who had never smoked had a brother at home who smoked, compared with 33% of pupils who smoked regularly. In **Scotland**, there was less variation in the proportion of pupils with mothers or fathers who smoked; the only significant differences were between regular smokers and all other smokers."

This has been quoted at some length from the **United Kingdom** survey since, in other countries, the pattern is almost identical. It is not possible to make exact comparisons, but Table 5 shows the close similarities in the key groups:

Table 5

SMOKING BEHAVIOUR OF THOSE WITHOUT SMOKERS IN HOUSEHOLD

	England*	Wales*	Scotland*	Australia***	Norway**	Spain**	Hong Kong**
Never smoked	46%	39%	33%	47%	N/A	21%	34%
Tried once	33	31	26	33	N/A	17	
Used to smoke	29	26	27	31	N/A	9	16%
Occasional smoker	22	27	18	28	N/A	6	
Regular smoker	18	10	10	18	N/A	7	

* = 11-15 year-olds
** = 7-15 year-olds
*** = 7-16 year-olds

Thus, as already quoted, less than one in five of regular smokers in **England** came from households where there were no other smokers, and the proportion dropped to only one in ten in **Wales** and **Scotland**. In **Spain**, it was less than one in ten, and in **Hong Kong** far less. Of the countries studied by CRU, the highest proportion of juvenile regular smokers coming from

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

households where there were no other smokers was in **Australia** (equal to the **United Kingdom**). Even there, they still numbered less than one in five of the smoking group — not more than one fifth, in other words, have automatically to turn to "other reasons" for smoking.

Altogether, whatever the nature of tobacco controls in the countries studied, young people are three times as likely to smoke when they live in a household where anybody smokes as they are in a household where there are no smokers at all.

Children are exposed to many different influences such as the authority of parents and the comradeship and rivalry of siblings and/or peers. For instance, in the **United Kingdom**, it is very clear that the habits of brothers and sisters are of more importance than those of parents, the latter inevitably playing a larger role in one-child households (and, in consequence, presumably playing that role in *every* household, as far as the firstborn is concerned).

A note is relevant here on **Hong Kong**. Among all those interviewed (that is, the total sample of 1003 respondents), 44% said that their *father* smoked — an identical proportion to those in **England** — and 55% said that they came from a family where somebody smoked, compared with 65% in **England**. However, whereas in **England** 37% reported that their *mother* smoked, only 4% gave this answer in **Hong Kong**. In other words, it would appear from the very small numbers of children *and* mothers smoking in **Hong Kong**, that the maternal role is critical in juvenile smoking initiation in that country.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

APPENDIX A

BACKGROUND TO THE CHILDREN'S RESEARCH UNIT (CRU)

The Children's Research Unit is a London-based market research company specialising in research with children and young people in the United Kingdom and internationally. It was set up in 1972 by Glen Smith, a child psychologist, who is a full member of the British Market Research Society. CRU has played a leading role in developing the field of children's research in the United Kingdom and abroad, by applying modifications of established clinical procedures for obtaining information from children and young people.

Studies have been conducted in a wide variety of areas such as town planning (play facilities), road safety, career guidance, drug abuse, toys and games, computers and software, magazines and comics, food and drink, TV programmes, and advertising in all media.

CRU regularly disseminates information concerning its research findings about a wide variety of markets, via the international conference circuit and professional publications. In addition, CRU is frequently consulted by the media (television, press and radio) regarding children's reactions to advertising, their consumer behaviour patterns, interests/lifestyles, and other issues. Channel 4 Television (London) recently filmed a session at CRU's headquarters where children were being interviewed about television advertising.

CRU's clients include major manufacturers, advertisers, professional and trade associations, media groups, government units (the UK Central Office of Information - road safety; and the European Parliament - anti-drug campaigns), banks, film companies, television groups and publishing houses.

In addition to carrying out research on a national and international scale, the company also conducts research at its Observation Studio, with a two-way mirror facility, and at its Electronic Research Laboratory. CRU also runs a regular children's panel.

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APPENDIX B

INTERVIEWING CHILDREN : GENERAL COMMENTS

In children's research, CRU is frequently asked the question: "At what age can children be considered 'reliable' research respondents?" Since a wide range of individual differences can be found whenever children are grouped in chronological-age levels, answers to such a question can only be couched in general terms.

Overall, CRU's policy (dictated by past experience) is to interview children from a minimum age of 5 years. Clearly, due to the 5-year-old's lack of conceptual development, interview exchanges have to be short, to the point and carefully structured, in order to allow the child freedom of response. Children under the age of 5 years are more productively assessed using direct observation methods, as applied in the company's two-way-mirror Observation Studio.

It is of fundamental importance to *any* research programme involving children to utilise rapport-building techniques which aim to establish rapport between the interviewer and the child as early as possible in the interview situation. Unless the child is particularly sophisticated, there is a strong tendency in adult/child interview settings for the child to behave in approval-seeking terms, when confronted by an unfamiliar adult. This can induce the child to respond in a manner which he/she considers the interviewer wants to see/hear. If this attitude prevails, the interview becomes worthless.

In order to prevent this happening, CRU interviewers convey to the child at an early point in the interview that it is primarily what he/she thinks/feels about the subject under discussion which is important, and, as such, there are no "right" or "wrong" answers when evaluative questions are posed. The interviewer communicates this also at selected intervals during the interview, to serve as reinforcement and/or as a confidence-building technique. We have found that this usually produces honest responses from children who, in many cases, are often unaccustomed to the experience of meeting an unfamiliar adult who is interested in their views.

Location

The choice of interview setting can also enhance rapport. For an investigation of this nature and complexity, CRU has found that school settings are not conducive to investigating complex or controversial areas, given the

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APPENDIX C

CRU'S RESEARCH METHODS USED IN THIS STUDY

In the first instance, exploratory qualitative research was conducted in each country, in order to identify the key attitudes of respondents to smoking issues. A Master Questionnaire was then drawn up, for quantification purposes. The main topics covered in the questionnaire are noted in Appendix E.

Approximately 1000 respondents between the ages of 7 and 15/16 years were personally interviewed in each of the four countries directly surveyed by CRU. Children and young people were recruited via a *quota sample* (where selection requirements such as age and sex were pre-determined), and individual interviews were conducted in home. All interviews were conducted with the permission of a parent and the willing participation of the child, although in strict confidence and in the absence of either parent.

Since identical interviewing procedures were adopted in each country, the samples interviewed were broadly comparable. Leading research agencies conducted the interviews in their country of origin under close supervision from CRU's directors.

The Research Rationale

1. Market Selection

In addition to tobacco, CRU selected two extra markets, alcohol and confectionery (interpreted as "beer" and "chocolate") in order to provide product comparisons in the four countries surveyed. However, to restrict quantitative interviews to manageable lengths, comparable questions about these three products (tobacco, alcohol and confectionery) were only asked about brand and advertising awareness, including the sources of awareness. The bulk/remainder of the questionnaire concentrated on investigating cigarette/tobacco issues exclusively.

2. Application of Distancing Techniques

CRU used a distancing technique for obtaining each child's attitudes and behaviour patterns in relation to smoking/non-smoking as follows. The interview first focussed on *parental* behaviour, then *siblings and friends*, and finally on the *respondent* him/herself. In this way, by talking firstly about *other* people's behaviour in a non-judgemental manner, rapport was built up between interviewer and respondent, and the child became appropriately more relaxed and confident when reporting on his/her own behaviour.

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APPENDIX D

SMOKING FREQUENCY

In the 1982 and 1984 United Kingdom Government Surveys conducted by Dobbs and Marsh, a preliminary question asked all children to check the alternative from those listed below, which they felt best described their position: (*)

Statements	Abbreviations for Classification
I have never smoked	"Never smoked"
I have only tried smoking once	"Tried once"
I used to smoke sometimes, but I never smoke a cigarette now	"Used to smoke"
I sometimes smoke cigarettes now, but I don't smoke as many as one a week	"Smokes occasionally"
I usually smoke between one and six cigarettes a week	"Smokes regularly"
I usually smoke more than six cigarettes a week, but less than forty	"Smokes regularly"
I usually smoke forty or more cigarettes a week	"Smokes regularly"

To consider "Less than 6 cigarettes a week" as amounting to "Smokes regularly" may seem strange. It must be considered, however, that obtaining cigarettes and smoking them is much more difficult for juveniles than for adults, so that a small number of cigarettes smoked amounts to "regularly" as far as children are concerned.

In later parts of the interview, further questions were asked which could, at the analysis stage, be cross-checked against the original statements. For example, some of those who originally said that they never smoked, subsequently admitted to having tried once or twice. In the final data, the adjusted figures were used.

It is important to stress the care which was taken by the UK Government study to ensure that the statements measured the real level of incidence.

(*) These classifications can be found in: Bewley B.R. and Bland J.M. "Academic and social factors related to cigarette smoking by schoolchildren." British Journal of Preventive and Social Medicine, 1977, 31 : 18-24 (54).

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

APPENDIX E

OUTLINE INFORMATION ABOUT SURVEYS

	DATE	AGENCY	METHOD	SIZE	AGE RANGES (a)
UNITED KINGDOM					
England (b)	1984	Office of Population Censuses & Surveys	Written questions: **at school**	3658	11-15
Wales	1984	"	" "	2773	11-15
Scotland	1984	"	" "	2798	11-15
AUSTRALIA	1984	Children's Research Unit	Personal: **at home**	998	7-16
NORWAY	1985	"	" "	998	7-15
SPAIN	1986	"	" "	1016	7-15
HONG KONG	1986	"	" "	1003	7-15

Notes: (a) In all surveys, both boys and girls participated.
(b) Technically England-and-Wales: see note in text.

MAIN TOPICS COVERED IN SURVEYS

	Smoking Patterns	Factors Affecting the Start of Smoking	Attitudes toward Smoking	Advertising Awareness
United Kingdom	X	X	X	—
Australia	X	X	X	X
Norway	X	X	—	X (c)
Spain	X	X	—	X (c)
Hong Kong	X	X	—	X (c)

(c)There were some questions on brand awareness.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

QUESTION EXAMPLES

How old were you when you tried that first cigarette? (CIRCLE APPROPRIATE CODE)

5 YEARS OR UNDER	I
6 YEARS	2
7 YEARS	3
8 YEARS	4
9 YEARS	5
10 YEARS	6
11 YEARS	7
12 YEARS	8
13 YEARS	9
14 YEARS	V
15 YEARS	X

Where were you when you tried it?

_____

_____

_____

And where did you get that first cigarette from? (PROBE FULLY)

_____

_____

These are some other reasons that people have given us as to why they tried their first cigarette. I would like you to look through them, and decide if any of them had any part in your trying a cigarette. Tell me, which was the most important reason?

(SHOW PROMPT CARD) (PROBE: ANY OTHER REASONS?)

I TRIED IT FOR A DARE	
BECAUSE ALL MY FRIENDS SMOKED	
SOMEONE GAVE ME ONE	
I WAS BULLIED	
I'D SEEN ADVERTISING FOR CIGARETTES	
I JUST FOUND ONE	
I WANTED TO SEE WHAT IT WAS LIKE	
I TRIED IT TO LOOK TOUGH	
I TRIED IT TO LOOK GROWN-UP	
I TRIED IT TO SHOW OFF	

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

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In the 1982 and 1984 United Kingdom Government Surveys conducted by Dobbs and Marsh, a preliminary question asked all children to check the alternative from those listed below, which they felt best described their position: (*)

Statements	Abbreviations for Classification
I have never smoked	"Never smoked"
I have only tried smoking once	"Tried once"
I used to smoke sometimes, but I never smoke a cigarette now	"Used to smoke"
I sometimes smoke cigarettes now, but I don't smoke as many as one a week	"Smokes occasionally"
I usually smoke between one and six cigarettes a week	"Smokes regularly"
I usually smoke more than six cigarettes a week, but less than forty	"Smokes regularly"
I usually smoke forty or more cigarettes a week	"Smokes regularly"

To consider "Less than 6 cigarettes a week" as amounting to "Smokes regularly" may seem strange. It must be considered, however, that obtaining cigarettes and smoking them is much more difficult for juveniles than for adults, so that a small number of cigarettes smoked amounts to "regularly" as far as children are concerned.

In later parts of the interview, further questions were asked which could, at the analysis stage, be cross-checked against the original statements. For example, some of those who originally said that they never smoked, subsequently admitted to having tried once or twice. In the final data, the adjusted figures were used.

It is important to stress the care which was taken by the UK Government study to ensure that the statements measured the real level of incidence.

(*) These classifications can be found in: Bewley B.R. and Bland J.M. "Academic and social factors related to cigarette smoking by schoolchildren." British Journal of Preventive and Social Medicine, 1977, 31 : 18-24 (54).

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

However, the effects of these adjustments were small, as can be illustrated from the UK study from 1984:

	ADJUSTMENT	
	BEFORE	**AFTER**
Has never smoked	50%	45%
Tried once	19	24
Used to smoke	13	13
Smokes occasionally	5	6
Smokes regularly	13	13

Note: The official report refers to this part of the survey as **England** and **Wales** since certain Welsh schools were included to provide comparability with the 1982 study. For ease of reading throughout this report, it is referred to as "**England.**"

The OPCS's application of Bewley's Smoking Prevalence Indicator became a central part of CRU's planning of surveys in other countries. It was therefore repeated exactly in the children-and-smoking surveys reported here.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

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Scotland	1984	"	" "	2798	11-15
AUSTRALIA	1984	Children's Research Unit	Personal: **at home**	998	7-16
NORWAY	1985	"	" "	998	7-15
SPAIN	1986	"	" "	1016	7-15
HONG KONG	1986	"	" "	1003	7-15

Notes: (a) In all surveys, both boys and girls participated.
(b) Technically England-and-Wales: see note in text.

MAIN TOPICS COVERED IN SURVEYS

	Smoking Patterns	Factors Affecting the Start of Smoking	Attitudes toward Smoking	Advertising Awareness
United Kingdom	X	X	X	—
Australia	X	X	X	X
Norway	X	X	—	X (c)
Spain	X	X	—	X (c)
Hong Kong	X	X	—	X (c)

(c)There were some questions on brand awareness.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

APPENDIX F

COMPARISON OF RESTRICTIONS ON TOBACCO ADVERTISING IN COUNTRIES COVERED BY REPORT

COUNTRY	TELEVISION	RADIO	CINEMA	PRESS	SPONSORSHIP	POSTERS	POINT-OF-SALE ADVERTISING
AUSTRALIA	Cigarette and roll-your-own advertising prohibited since 1976	Cigarette and roll-your-own advertising prohibited since 1976	No ads in children's programmes and general programmes during school holidays	No specific restrictions for tobacco	No specific restrictions for tobacco	No specific restrictions for tobacco	No specific restrictions for tobacco
HONG KONG	No tobacco ads 4.30 - 6.30 p.m. or in programmes directed at young people	Restriction as for TV, except no 4.30-6.30 p.m. broadcasting ban. Regulated by TV authority	No specific restrictions for tobacco	No specific restrictions for tobacco	No specific restrictions for tobacco	No specific restrictions for tobacco	No specific restrictions for tobacco
UNITED KINGDOM	No cigarette or roll-your-own advertising permitted	No cigarette or roll-your-own advertising permitted	Voluntary controls. No cinema advertising (*)	Voluntary agreements on tobacco advertising since 1975	Voluntary restrictions since 1977 on expenditures, messages, health warnings, etc.	Voluntary restrictions on expenditures and sites near schools	No specific restrictions for tobacco
SPAIN	Restrictions include no ads for high-tar brands. No ads before 9.30 p.m.	Restricted as for TV. Exception for new low-tar brands for 2 years after introduction	Unrestricted except for Catalonia	No specific restrictions for tobacco	No specific restrictions for tobacco	Restrictions for tobacco. No posters in Catalonia	Advertising only allowed for domestic brands
NORWAY	No tobacco advertising permitted	No tobacco advertising permitted	No tobacco advertising permitted	No tobacco advertising permitted	No sponsorship permitted	No tobacco advertising permitted	No tobacco advertising permitted

(*) Up to 1 April 1986, advertising was permitted in programmes for those aged 18 years and over.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

APPENDIX G

REVIEW OF THE LITERATURE

Many single factors have been postulated as to why children and young people start to smoke. However, a review of the international literature indicates that it is not any one factor but a *combination* of factors which contribute to the decision of whether to smoke or not.

Social factors, for instance, have been increasingly recognised internationally as worthy of more detailed examination, and a large number of studies have focussed on the association between social-network variables and the smoking habits of children and young people (9, 10). Most of the scientific literature in this field consistently agrees that social factors represent by far the most dominant influence as regards starting to smoke (11); and this was also the conclusion of studies from the late 1950s when Horn et al. (12) rated parental and peer group factors as the two most important ones for predicting smoking among high-school students. An early Norwegian study (13) concluded that parental attitudes and peer group pressure were of major importance.

In their comprehensive review of research and theory on the modification of smoking behaviour, Leventhal and Cleary (14) state that social pressure is a prime initiator of experiments with cigarettes. On the other hand, *personality* factors are not considered important in predicting the start of smoking. Williams (15) maintains that the relationships between smoking and personality variables have often been tenuous, and occasionally contradictory. Personality factors appear to influence the amount and type of smoking, rather than the actual adoption of the habit, which is determined more by the social and familial environments of the person.

Regarding *parental behaviour*, a large number of studies confirm that the probability that children and young people smoke increases when their parents smoke (16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38). Some studies conclude that the mother's example is of greater importance than the father's (39, 40, 41), whilst two studies claim the opposite (42, 43). A few studies did not find any association between parental smoking behaviour and the children's habits (44, 45, 46). Bynner (47), in his well-known study of smoking amongst schoolboys, maintains that the association between the parent's and the children's smoking habits is moderate, a conclusion conforming with many of the studies mentioned above. Palmer (48) found that girls more than boys are influenced by their parents' habits. Some researchers report that the relation between parental and child smoking habits is stronger between father and son than between

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mother and daughter (49, 50, 51, 52, 53, 54, 55, 56). That mothers' and daughters' habits are particularly closely related, is reported from two studies (57, 58). Horn's study from 1968 (59) showed that children reduce their use of tobacco when their parents stop smoking.

Attention has also been given to *parental attitudes*. Several researchers have demonstrated that families who are permissive as regards smoking generate an increased probability that the children will start smoking (60, 61, 62, 63, 64, 65, 66, 67). Williams (68) finds that girls more than boys are influenced by parental attitudes. Significant association has also been reported between parents' permissiveness and children's smoking behaviour (69, 70, 71).

The effect of *living outside the parental home*, or with only one of the parents, has also been studied. Wake et al. (72) found that young people living with their parents smoked less than those living outside the family home. Another study concludes that boys leaving their parents at a young age are more likely to smoke (73). A high percentage of smokers has been found amongst children in homes where the parents are divorced (74, 75).

Several surveys have focussed on *the role of siblings*. The conclusions are consistent: when sisters or brothers are smokers, the probability that a child will start smoking is increased (76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87). One study has also concluded that sisters' influence is greater than brothers' influence (88). Another researcher has maintained that the smoking habits of boys are particularly influenced by their brothers (89), whilst one study has confirmed that the association between girls and their sisters' smoking habits is particularly high (90).

A near-perfect consistency is found in studies where the smoking habits of young people and children have been compared with *the smoking habits of best friend or closest friends*. When best friend or friends are smoking, the probability of being a smoker is strongly increased (91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107).

Overall, the findings of these studies indicate that children and young people are most likely to smoke when their father, mother, siblings or best friend(s) smoke, and when the parents are permissive towards children's smoking. Within the family, the association seems to be strongest between persons of the same sex. An additional finding from an early study also deserves mention: children smoke less when their parents have stopped smoking (108).

Advertising has been postulated as having a positive bearing on the decision of the child or young person to start smoking; and several studies have attempted to identify advertising as a major influence in this respect.

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Fisher and Magnus (109) claim that their survey leaves "little doubt" that advertising leads children to take up smoking. However, certain methodological deficiencies and a sample containing children from "disadvantaged" schools (45%) raise serious questions as to the data's validity.

Chapman and Fitzgerald (110, 111) surveyed secondary schools to ascertain juvenile brand preference and advertising recall, but they did not address themselves to the problems of conducting complex and controversial research within schools (refer to Appendix A's sections on "Location" and "Administrator Bias"), and a limited self-completion questionnaire was utilised. Notwithstanding, the authors claim that their data show that "adolescents are well aware of advertisements," but also point out that "the role played by advertising in the decision to smoke needs refining conceptually, so that appropriate questions may be asked in research."

Ledwith (112) claims that televised sports sponsorship by tobacco manufacturers acts as cigarette advertising to children, but acknowledges that his study makes no attempt to establish causal links between sponsorship and children's smoking behaviour. Again, school settings were used, plus the inevitable administrator bias of class teachers administering (limited) self-completion questionnaires to pupils who were not given a free choice to participate in the study, the decision to participate being taken by the headmaster of the school.

Overall, studies of advertising as a potential initiator of juvenile smoking have not been comprehensive, in that they have not examined advertising in the context of other potential influences. They also contain methodological deficiencies. None have attempted to examine the incidence of juvenile smoking in relation to the varying restrictions on tobacco advertising internationally, with the result that no comparable international database has been established by previous researchers.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

APPENDIX H

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SELECTED SOURCE MATERIAL

HOW ADVERTISING WORKS: COMPETITION IN A MATURE MARKET

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

HOW ADVERTISING WORKS -- COMPETITION IN A "MATURE" MARKET

Selected Source Materials

Note 5 -- M. Waterson, "Advertising and Tobacco Consumption: An Analysis of the Two Major Aspects of the Debate," *International Journal of Advertising* 59 (1991)

Note 7 -- *Roper Reports* 90-2, Questions 58 and 59, p. 39.

Note 7 -- Peter D. Hart Research Associates, Inc., Consumer Study # 2910, Question 15a

Note 7 -- "Brand Loyalty Is Rarely Blind Loyalty, " Wall St. J., Oct. 19, 1989, at B1

Note 11 -- Young & Moschis, "Review of Eye Tracking and Recall Study of Adolescents Viewing Tobacco Advertisements" (Jan. 1989) (unpublished manuscript)

Note 12 -- Miller, "No Escaping Ads -- Response to Clutter: More Clutter," *Advertising Age*, Dec. 11, 1989, p. 34

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Source: International Journal of Advertising
September 1990-

THE ROLE OF ADVERTISING

Advertising can be defined as the paid for communication of information. It is used for a variety of purposes, ranging from publicizing the availability of branded or generic goods ('drink more milk'), to job recruitment, charity fund-raising and a wide variety of other non-commercial purposes. Most advertising is bought in connection with selling branded goods and services.

Advertising does not have an automatic effect. Many advertisements do not produce the desired consumer response. Nor does the effectiveness of advertising necessarily increase in proportion to the amount spent.

These conclusions are massively documented in the advertising literature. For example, the Proceedings of a recent Marketing Science Institute (US) Conference observed:

> How often does it (advertising) work? The findings from split cable tests and analyses of scanner data suggest that individual advertising campaigns for established brands succeed roughly twenty to thirty per cent of the time.... The high percentage of unsuccessful advertising campaigns reflects the difficulty in obtaining a change in behaviour from inattentive, cynical customers, especially in the absence of a specific, newsworthy message. (July 1988).

Marketing textbooks illustrate the difficulty facing advertisers by pointing out that a great many new brands — most of which are heavily advertised — fail to become successful products. The message may be one that the audience does not want to hear, in which case it will be ignored. Even when an advertisement features a useful and appealing product and is correctly placed, it may still fail to sell the goods as intended: for example, if it appears alongside an advertisement for a product known by users to offer superior value in terms of price or quality. This is the primary reason why a great deal of advertising must inevitably fail (if failure is defined as failure to increase the sales of a particular brand). As a prominent marketing consultant noted recently:

> The introduction of new types of product may be accelerated by publicity but, in general, advertising is about market share within category. My gain is your loss, and vice versa. This grim truism must condition everything that is said about advertising budgets. (Bloom, 1989.)

For the purposes of analysis it is useful to define display advertising by reference to its purpose. Display advertising (i.e., all advertising other than classified) can be broadly divided into two categories which have quite different purposes:

1. Brand preference advertising.
2. Display advertising for purposes other than brand preference.

Brand preference advertising

Brand preference advertising usually seeks only small changes in consumer behaviour. The choice between one brand of toothpaste and another is of little consequence for the individual consumer, although in aggregate it is obviously of great importance to toothpaste manufacturers.

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Source: International Journal of Advertising
September 1990-

Even though the purchase decision is inconsequential in a market such as toothpaste it is nevertheless influenced by many factors. The price of the product in relation to competitive products, the quality of the product in relation to competitive products as judged from previous purchases, and special promotional offers, are three obvious factors which can affect purchase decisions. In short, advertising expenditure is just one element among many which may or may not influence the customer to choose a particular brand.

But, crucially, it is unlikely that all campaigns can collectively be successful. Brand advertising is primarily competitive in nature. In a new or rapidly expanding market it is conceivable, although unlikely, that all brands can be successful; but the competitive nature of brand advertising means that in a stable or declining market, for every winner there *must* be a loser. To quote, Andrew Ehrenberg Professor of Marketing at the London Business School:

> Most advertising for brands attempts to defend or maintain brand share. Most firms view advertising as a price they must pay to stay in the market — a price they often try to minimise (1982).

In a market comprising, for example, three soap or petrol companies with equal technological and managerial skills, a company which ceases to advertise is likely to find its markets slipping away to its competitors. It is this which explains the prevalence of advertising in markets such as petrol where it is obvious that overall consumption is unlikely to be affected by brand advertising. It should be noted however that there are many brands that have been successful without advertising. For example, in the early 1970s:

> Quosh managed to treble its sales to the equivalent of £60m in today's money, without any advertising at all (Bloom, 1989).

To summarize, the business of advertising and selling goods, even when the purchase decision is one of a most trivial kind, is neither simple nor easy. No matter how much is spent on brand preference advertising, there is no guarantee of success and indeed a considerable risk of failure, a fact of business life.

Despite the uncertain nature of the success of advertising from the advertiser's point of view, there can now be little question that advertising is of immense value for the economy as a whole. It acts as a lubricant to mass consumer markets, speeding up the transmission of product knowledge, whether this is the launch of a new product type (such as the VCR) or simply a new brand of low-tar cigarette. Advertising also reduces the cost of transmitting brand information (compared with the alternatives available) to the millions of potential customers, thereby reducing the cost to the manufacturers of product innovation and new product launches.

Finally, advertising reduces the cost to the consumer of comparing the prices and qualities of products that are on the market. It is cheaper and quicker to leaf through the pages of a magazine to compare the virtues and values of the various brands of an intended purchase than to visit twenty or thirty different stores.

Research has made clear that the market systems of the free world are dependent for their effectiveness upon the existence of competition, and that the effectiveness of competition in mass markets largely depends on the freedom to advertise.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Source: International Journal of Advertising
September 1990-

To summarize, the role of advertising is a complex one. There are good reasons for believing that advertising does not provide an easy or automatic means of expanding sales at either the individual brand level or at the level of a whole industry. Sales of brands and product categories are determined by many factors, of which advertising is but one. There are reasons for believing that the task of radically changing human behaviour patterns is a more difficult task for advertising than is the far simpler, but still difficult, job of achieving brand switching.

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58. When purchasing certain products we care very much about exactly what brand we are buying. For other products we buy whatever seems best at the time. Here is a list of some different products. (Card shown respondent) Would you read down that list, and for each product tell me if it is something for which you usually buy only one specific brand, or something for which you buy whatever seems best at the time, or a product you don't use at all? First, frozen dinner.

	Buy only one brand	Buy whatever best	Don't use	Don't know	Total users	Product users only: Buy only one brand	Product users only: Buy whatever best
d. Mayonnaise	51%	40	9	1	91%	56%	44%
l. Coffee	41%	41	15	2	83	50	50
c. Soft drinks	33%	57	8	2	90	37	63
h. Tea bags	31%	48	18	3	79	39	61
e. Cigarettes	25%	7	65	3	32	77	23
i. Orange juice	22%	70	5	3	93	25	75
b. Cold cereal	22%	67	9	2	89	25	75
j. Beer	21%	30	46	3	51	41	59
g. Ice cream	20%	70	8	2	90	22	78
f. Dry soup mixes	13%	39	44	4	52	25	75
k. Liquor	12%	51	32	4	45	28	72
a. Frozen dinner	10%	48	40	3	58	17	83

59. Now suppose you went to the store and they were out of your brand of *(read item)*. Would you buy another brand, or would you not buy *(read item)* until you could get your regular brand?

(Asked of and based on those who buy only one brand for each product)

	Wait for regular brand	Buy other brand	Depends (vol.)	Don't know	(Base)
e. Cigarettes	53%	34	9	4	(25%)
d. Mayonnaise	53%	41	4	2	(51%)
a. Frozen dinner	50%	44	5	1	(10%)
l. Coffee	48%	45	4	2	(41%)
h. Tea bags	47%	48	3	2	(31%)
k. Liquor	42%	47	7	4	(12%)
b. Cold cereal	42%	52	5	1	(22%)
j. Beer	40%	51	7	2	(21%)
f. Dry soup mixes	40%	53	2	5	(13%)
c. Soft drinks	38%	54	4	2	(33%)
g. Ice cream	36%	57	4	3	(20%)
i. Orange juice	30%	63	5	2	(23%)

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Peter D. Hart Research Associates, Inc.
1724 Connecticut Avenue, N.W.
Washington, D.C. 20009
(202) 234-5570

Interviewer: 2064 Respondents
City/Town: June 15-30, 1989
County:

Consumer Study
Study #2910

48	Male	
52	Female	
	4	

Area: 5 | Sample Point: 6 7 8 | Form: 9 | Date: June 10 11 1989

I'm from Hart Research, the national public opinion research firm in Washington, D.C. We are conducting a survey across the nation, and I'd like to ask you a few questions. But first, which person in your household--age 18 or older--has had the most recent birthday?

HOW TO DETERMINE WHOM YOU ARE TO INTERVIEW IN THIS HOUSEHOLD:

1. If only one man or woman 18 or older lives here, interview that person, provided your quota for that sex has not been completed.

2. If more than one man or woman 18 or older lives here, interview person with most recent birthday (who is at home).

1a. Compared to what you hoped the quality of your life would be like at this stage, how satisfied would you say you are with your life right now--extremely satisfied, pretty satisfied, just somewhat satisfied, or dissatisfied?

Extremely satisfied.....	22
Pretty satisfied.....	49
Just somewhat satisfied...	22
Dissatisfied.....	6
Not sure.....	1

1b. Compared to the expectations you had ten years ago, would you say that your current standard of living is less comfortable than you had expected, is about as comfortable as you had expected, or is more comfortable than you had expected ten years ago?

Less comfortable than expected.....	22
About as comfortable as expected...	51
More comfortable.....	26
Not sure.....	1

1c. Thinking about your financial situation, would you say that your household income is enough to enable you to live as comfortably as you would like, is enough to pay your bills and have a little left over to save or spend on a few extras, is only enough to pay your monthly bills and obligations, or is not enough to meet your monthly obligations?

			1d.	1e.
Live comfortably.....	25	SKIP TO 2.		
Can pay bills and save or spend a little....	45	ASK 1d, THEN 2.	..... At least 10%..... 24%	Struggle..... 7%
Can only pay bills.....	20	ASK 1e, THEN 2.	Less than 10%.... 16	Get bills paid alright.....11
Not enough to pay bills	9	SKIP	Not sure/refused. 5	Not sure/refused.. 2
Not sure/refused.....	1	TO 2.		

1d. When it comes to what you have left over after you pay your bills, would you say it is at least 10% of your total salary, or less than that?

At least 10%.....	_____	(See above)
Less than 10%.....	_____	
Not sure/refused.....	_____	

(ASK ONLY OF THOSE WHO SAY IN 1c THEY CAN ONLY PAY BILLS.)

1e. When it comes to paying the bills, would you say you have to struggle most months and juggle your finances, or do you get your bills paid alright but have nothing left for savings?

Struggle.....	_____	(See above)
Get bills paid alright	_____	
Not sure/refused.....	_____	

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

15a. (HAND RESPONDENT SHOW CARD I.) There are a number of different products that many of us buy. In purchasing certain things, we may care very much about exactly what they are and which brand they may be. We will sometimes even pass up a sale on a different brand to get exactly the brand we want. For other products, it really doesn't matter that much which brand we buy, as long it meets certain basic requirements.

Let me just give you an example: some people will purchase any deodorant or one from a group of acceptable deodorants, as long as it does the job. Others will only accept one particular brand.

Now I would like to read you a list of 25 products, and for each one, please tell me whether you usually only buy one specific brand of that product, or whether you are not loyal to a certain brand. If you don't use a product I mention, just say so. (READ EACH ITEM AND REPEAT CHOICES.)

	15a. Usually Buy One Brand	15a. No Brand Loyalty	15a. Don't Use	15a. Not Sure	15b. 5 Years Or More
A. Shampoo	43	54	2	1	25
B. Automobile	44	49	5	2	30
C. Ketchup	49	47	3	1	34
D. Television set	34	65	-	1	24
E. Pet food	27	33	38	2	17
F. Headache remedy	52	40	7	1	31
G. Blue jeans	27	56	16	1	15
H. Perfume/ aftershave	41	49	9	1	21
I. Beer	29	31	39	1	15
J. Gasoline	37	58	5	-	18
K. Coffee	51	36	12	1	30
L. Underwear	36	62	1	1	20
M. Mayonnaise	62	33	4	1	41
N. Cigarettes	29	12	58	1	19
O. Laundry detergent	46	50	2	2	24
P. Film	50	39	9	2	30
Q. Soda	41	51	7	1	20
R. Canned vegetables	22	66	10	2	10
S. Athletic shoes/ sneakers	24	64	11	1	10
T. Bath soap	52	47	-	1	29
U. Tires	30	60	7	3	11
V. Tuna fish	41	53	5	1	20
W. Garbage bags	22	74	3	1	8
X. Batteries	28	69	2	1	12
Y. Toothpaste	60	38	2	-	35
None				5	
Not sure				1	

15b. Now, please go back through this list and tell me the letters of the products you currently use and have purchased only one brand of for five years or more. (RECORD ITEMS ABOVE UNDER 15b.)

15c. Thinking about the products you try to buy or use regularly, how many do you find are the same as the ones you grew up with, or that your parents used regularly--most of them, quite a few, only some, or not very many of them?

Most of them	15	Not very many	30
Quite a few	20	Not sure	3
Only some	32		

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

OCT 1 9 1989

THE WALL STREET JOURNAL.

MARKETPLACE

THURSDAY, OCTOBER 19, 1989

Brand Loyalty Is Rarely Blind Loyalty

Rise in Coupons, Choices Blamed For '80s Erosion

By RONALD ALSOP
Staff Reporter of THE WALL STREET JOURNAL

Betty Lombardi is a mild-mannered homemaker and grandmother in rural Hunterdon County, N.J. But put her behind a shopping cart and she turns ruthless.

If Colgate toothpaste offers a tempting money-saving coupon, she'll cross Crest off her shopping list without a second thought. Never mind that her husband prefers Crest. Some weeks when her supermarket runs a double-coupon promotion, she boasts that she shaves $22 off her bill.

Money isn't the only thing that makes her dump once favorite brands. After she heard about the artery-clogging hazards of tropical oils in many cookies, she dropped Pepperidge Farm and started buying brands free of such oils. "I always thought Pepperidge Farm was tasty and high quality," Mrs. Lombardi says. "But I don't want any of that oil for my grandkids." (Pepperidge Farm says it can't tell exactly how many customers it has lost, but it hopes to remove the objectionable tropical oil from all its products by year end.)

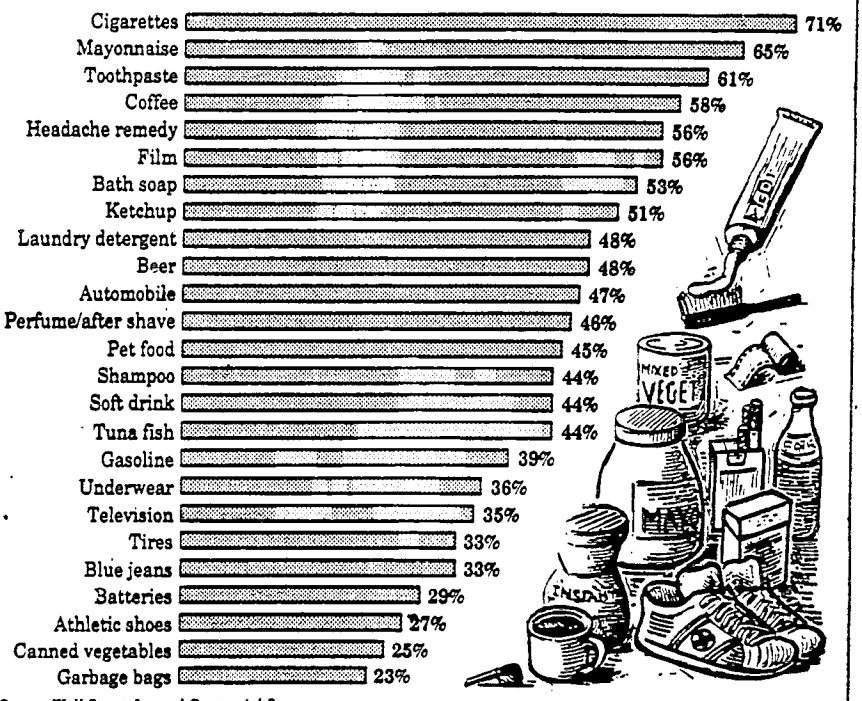
THE AMERICAN WAY OF BUYING

A WALL STREET JOURNAL CENTENNIAL SURVEY

PART OF A SERIES

Faithful or Fickle?

Percentage of users of these products who are loyal to one brand



Source: Wall Street Journal Centennial Survey

Clearly, people like Mrs. Lombardi are giving marketers fits. She represents a new breed of savvy consumer who puts bargain prices, nutritional and environmental concerns, and other priorities ahead of old-fashioned brand loyalty.

A Dizzying Choice

While brand loyalty is far from dead, marketing experts say it has eroded during the 1980s. Marketers themselves are partly to blame: They've increased spending for

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

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coupons and other short-term promotions at the expense of image-building advertising. What's more, a flood of new products has given consumers a dizzying choice of brands, many of which are virtually carbon copies of one other.

"Marketers have brought this on themselves with their heavy use" of promotions, contends Joe Plummer, an executive vice president at the D'Arcy Masius Benton & Bowles ad agency. "Without some real product improvements, it's going to be difficult to win that loyalty back."

The Wall Street Journal's "American Way of Buying" survey this year found that most consumers switch brands for many of the products they use. For the survey, Peter D. Hart Research Associates asked some 2,000 consumers, including Mrs. Lombardi, whether they usually buy one brand of a certain type of product or have no brand loyalty. More than half the users of 17 of the 25 products included in the survey said they're brand switchers.

Overall, 12% of consumers aren't brand loyal for any of the 25 product categories. About 47% are loyal for one to five of the products. Only 2% are brand loyal in 16 to 20 of the categories, and no one is loyal for more than 20 types of products.

For such products as canned vegetables and athletic shoes, devotion to a single brand was quite low, with fewer than 30% saying they usually buy the same brand. Only for cigarettes, mayonnaise and toothpaste did more than 60% of users say they typically stick with the same brand.

People tend to be most loyal to brands that have distinctive flavors, such as cigarettes and ketchup. Kathie Huff, a respondent in the Journal survey from Spokane, Wash., says her husband is adamant about eating only Hunt's ketchup. He simply can't stomach the taste of Heinz, she says. The 31-year-old homemaker adds, "The only other thing I'm really loyal to is my Virginia Slims cigarettes. Coke and Pepsi are all the same to me, and I usually buy whichever brand of coffee happens to be on sale."

Brand imagery plays a significant role in loyalty to such products as cigarettes, perfume and beer. People often stay with a particular brand because they want to be associated with the image its advertising conveys, whether that's macho Marlboro cigarettes or Cher's Uninhibited perfume.

Loyalty lags most for utilitarian products like trash bags and batteries. Only 23% of trash-bag users in the Journal survey usually buy the same brand, and just 29% of battery buyers stick to one brand.

Fashion Image

Underwear scored a middling 36% in brand loyalty, but consumer researchers say that's actually quite high for such a mundane product. "In the past, you just wore Fruit of the Loom and didn't care," says Peter Kim, U.S. director of consumer behavior research for the J. Walter Thompson ad agency. "The high score reflects the attempts to make underwear more of a fashion image business for both men and women."

He believes there's opportunity for a smart gasoline marketer to create a strong brand image and more consumer loyalty. What loyalty there is to gas brands, he believes, is a matter of stopping at the most conveniently located service stations.

Brand loyalty was stronger among older consumers in the Journal survey. Nearly one-fourth of participants age 60 and older claim brand loyalty for more than 10 of the 25 products in the survey; only 9% of those age 18 to 29 have such strong allegiance.

Higher-income people also tend to be more brand loyal these days, the Journal survey and other research studies indicate. Marketers speculate that more affluent people tend to lead more pressured lives and don't have time to research the products they buy for the highest quality and most reasonable price. An established brand name is insurance that at least the product will be of acceptable quality, if not always the best value for the money. It's sort of loyalty by default.

Meanwhile, "the bottom end of the market is becoming less loyal," says Laurel Cutler, vice chairman of the ad agency FCB/Leber Katz Partners. "They're buying whatever's cheaper."

The biggest wild card in the brand loyalty game: How those hotly pursued but highly unpredictable baby boomers will behave as they move into middle age. They grew up with more brand choices than any generation and have shown less allegiance so far. But now that they're settling down and raising families, might they also show more stability in their brand choices?

Mr. Kim of J. Walter Thompson doesn't think so. He believes baby boomers will continue to be selective in their brand loyalties. "Earlier generations were brand loyal across categories," he says, "but boomers tend to be brand loyal in categories like running shoes and bottled water, but less so in others like toilet paper and appliances."

While not as brand loyal as in the past, consumers today don't buy products capriciously, either. Rather, they tend to have a set of two or three favorites. Sometimes, they'll choose Ragu spaghetti sauce; other times, it will be Prego.

Striking Similarities

Advertisers attribute this shared loyalty to the striking similarity among brands. If a more absorbent Pampers hits the market, you can be sure a new and improved Huggies won't be far behind. The BBDO Worldwide ad agency studied "brand parity" and found that consumers believe all brands are about the same in a number of categories, particularly credit cards, paper towels, dry soups and snack chips.

"When there's a clutter of brands, consumers simplify the complexity by telling themselves, 'All brands are the same so what difference does it make which I buy,' " says Karen Olshan, a senior vice president at BBDO. "Too often, advertising imagery hasn't done a good job of forging a special emotional bond between a brand and the consumer."

But given such strong brand disloyalty, some marketers are putting renewed emphasis on image advertising. A small but growing number of companies are also trying to instill more fervent brand loyalty through such personalized direct-marketing ploys as catalogs, magazines and membership clubs for brand users.

While discount promotions are essential for most brands, some companies concede they went overboard in shifting money from advertising to coupons, refunds and other sales incentives.

Residual Impact

Some people argue that strong brands can afford to stop advertising for a time because of the residual impact of hundreds of millions of dollars spent on advertising through the years. But most companies are too afraid to take that chance. And perhaps with good reason. Says Clayt Wilhite, president of the D'Arcy Masius ad agency's U.S. division, "Every time 24 hours pass without any advertising reinforcement, brand loyalty will diminish ever so slightly—even for a powerful brand like Budweiser."

Consider, for example, what happened to Maxwell House coffee. The Kraft General Foods brand stopped advertising for about a year in 1987 and gave up several market share points and its leadership position in the coffee business. But since returning to advertising, Maxwell House has regained the lost share and is running neck and neck with archrival Folgers.

"Now, Philip Morris [Kraft General Foods' parent company] is committed to the coffee business and to increased advertising for Maxwell House," says Dick Mayer, president of the General Foods USA division. "Even though brand loyalty is rather strong for coffee, we need advertising to maintain and strengthen it."

How Polls Were Conducted

The Wall Street Journal "American Way of Buying" Survey consists of two separate, door-to-door nationwide polls conducted for the Journal by Peter D. Hart Research Associates and the Roper Organization. The two surveys, which asked different questions, were conducted using national random probability samples.

The poll conducted by Peter D. Hart Research Associates interviewed 2,064 adults age 18 and older from June 15 to June 30, 1989. The poll conducted by the Roper Organization interviewed 2,002 adults age 18 and older from July 7 to July 15, 1989. Responses were weighted on the basis of age and gender to conform with U.S. Census data.

For each poll, the odds are 19 out of 20 that if pollsters had sought to survey every household in the U.S. using the same questionnaire, the findings would differ from these poll results by no more than 2½ percentage points in either direction. The margin of error for subgroups would be larger. For example, for working women, the margin of error would be five percentage points in either direction. In addition, in any survey, there is always the chance that other factors such as question wording could introduce errors into the findings.

(Cont'd

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

OCT 19 1989

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Campbell Soup Co., for one, has concluded that it makes good sense to focus more on its most loyal customers than on people who buy competitive brands. "The probability of converting a non-user to your brand is about three in 1,000," says Tony Adams, the company's vice president for marketing research. "The best odds are with your core franchise. Our heavy users consume two to three cans of soup a week, and we'd like to increase that."

So Campbell is talking to its "brand enthusiasts," probing their psychological attachment to its soup. In one consumer focus group, a fan declared that, "Campbell's soup is like getting a hug from a friend." That helped persuade the company to introduce a new advertising slogan: "A warm hug from Campbell's."

DATE October 13, 1989

TIME 10:22 PM

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

January 5, 1989

REVIEW OF EYE TRACKING AND RECALL STUDY OF ADOLESCENTS VIEWING TOBACCO ADVERTISEMENTS

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We have been asked by The Tobacco Institute to review P.M. Fischer, et al., "Recall and Eye Tracking Study of Adolescents Viewing Tobacco Advertisements," which appears in the January 1989 issue of the Journal of the American Medical Association. One of us -- the president of a firm that does market research for a number of large national advertisers, including cigarette companies -- was asked by The Journal to comment on the article before it was published. The other of us is a professor of marketing who has written extensively on the impact of advertising on adolescents.

The authors summarize their work as follows:

> "[O]ur data indicate that adolescents often do not see the warning in tobacco advertisements. Even when seen, there is little, if any, reading of the warning. In addition, adolescents are unable to recall the content of the observed warnings or to correctly recognize warnings from a list. If the warnings are not seen, or are seen but not processed, they are extremely unlikely to be effective in countering the promises of power, romance and fun implied by tobacco advertisements."

We question the results reported by the authors and what those results are claimed to signify. First, the authors do not acknowledge lost data, much less explain those lost

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data, and they aggregate data for different subject populations that should have been considered separately. Second, the authors fail to present data from the study that could significantly affect the conclusions drawn, and they do not consider alternative interpretations of the data that they do present.

Underlying the authors' entire discussion of their data is the premise that, to be "effective," the Surgeon General's warning must be read anew, as though for the first time, each time a tobacco advertisement is viewed. In our view, with many years of academic and research experience in this field between us, that premise is incorrect. At a minimum, the premise remains to be demonstrated. Given their premise, Fischer, et al. were bound to conclude that the Surgeon General's warnings are not "effective" with adolescents.

In the following discussion, we describe the study, commenting on anomalies. We then assess the authors' conclusions.

Description of the Study

Fischer, et al. report the results of a study of 61 adolescents, aged 13-17, selected from a YMCA membership list and participating (for pay) with parental consent. Two-thirds of the adolescents were male and nearly all were white. The authors do not disclose where the adolescents live or describe their educational, social or economic backgrounds. They do say that "the study population used was small and [was] not

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* * * selected to be representative of all adolescents," although they purport to draw conclusions for all adolescents.

The 61 adolescents were asked to view five full-page advertisements (four cigarette advertisements and one smokeless tobacco advertisement) that had been removed from magazines and mounted in a three-ring binder. Each subject was asked to view the advertisements while wearing an eye view monitor that permitted eye tracking measurements. After viewing the advertisements, each subject was asked a series of questions about the advertisements and the Surgeon General's warnings appearing therein. The authors say the subjects were told that the study "involved measuring eye tracking while viewing advertising," but the authors do not say what the subjects were told about the purpose of the study or what they were told they were supposed to do when shown the mounted advertisements -- items obviously relevant to any assessment of the subjects' behavior.

Although they do not say so, the authors apparently obtained data for a total of 305 exposures (61 subjects times five advertisements). The authors report that the data for 16 of the subjects (80 exposures) were "unacceptable for analysis because of technical problems." After discarding those 80 exposures, usable data for 225 exposures involving the remaining 45 subjects should have been available, but the authors report that only 202 exposures involving those subjects were "available for analysis." This implies that the data for 23

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additional exposures involving those 45 subjects were found to be unusable. The authors say nothing about these 23 "lost" exposures.

Overall, the ratio of all unusable eye tracking data (103 exposures) to all eye tracking data (305 exposures) is more than 1 out of 3 -- an exceedingly high figure. It causes us to question the reliability of the measurements that were used. Since we do not know how the 23 "lost" data were distributed among the data for the 45 subjects whose data generally were usable, we cannot assess the validity of the inferences drawn from the data for those subjects that were used. The subject population -- 61 subjects to begin with, and 45 subjects for the most crucial part of the study -- was far smaller than the population that would be utilized in a standard market research program.

According to the authors, the 45 adolescents for whom usable eye tracking data generally were available did not "see" the Surgeon General's warning in 43.6 percent of the cases (88 out of 202 exposures), and when these 45 subjects did "see" the warning they did not really "read" it. The authors report that the mean viewing time for each advertisement was 8.95 seconds, and that of this time an average of .75 seconds was spent viewing the warning. We assume -- although the authors do not say so -- that the .75 second average is the average only for those exposures in which the warning was "seen," and does not include those exposures where the warning

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was not "seen." If we are mistaken, then the .75 second figure is misleadingly low, a double-counting of the 43.6 percent not-"seen" figure. We question, in any case, the author's implication that it is valid to compare the time spent viewing words and the time spent viewing pictures. (4)

The authors report that when the subjects were shown a list of ten Surgeon General's warnings and were asked to identify the five warnings they had been shown, the mean recall score was about half-way (7.25) between scores indicating random guessing (a score of 5) and perfect recall (a score of 10). (In their abstract, the authors call the 7.25 score "only slightly better than random guessing" -- a clear overstatement.) This mean recall score is deceptively low because two of the five fictitious warnings closely resemble actual warnings. Selection of these fictitious warnings could be considered "incorrect" only in the most trivial sense of the term.

In addition, the mean recall score includes the responses of the 16 subjects whose eye tracking data were discarded, together with the results for the 45 subjects whose eye tracking data generally were used. This creates confusion because the authors suggest a relationship between the results of the question-and-answer part of the study (what the subjects recalled) and the results of the eye tracking part of the study (what the subjects "saw"), as though the same subject population was involved.

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Review of the Study's Results

The results of the study certainly do not signify that adolescents are unaware of the dangers associated with smoking. As the Surgeon General has stated, "by the time they reach seventh grade, the vast majority of children believe smoking is dangerous to one's health." (1) According to a 1979 survey of 2,639 boys and girls aged 12-18 conducted by the National Institute of Education, over 96 percent of those questioned said they believed that "smoking is harmful to health." (2) Of 895 children and adolescents questioned in a subsequent survey, over 98 percent said they believed smoking is harmful and "accurately named one or more body parts that are adversely affected by smoking." (3)

The results of the study also do not signify that adolescents are unaware that the tobacco advertisements they see carry the Surgeon General's warnings. When the authors say that the adolescents participating in their study did not "see" the Surgeon General's warning in 43.6 percent of the viewings, we understand them to mean only that in those instances the subjects did not focus specifically on the warning. The eye tracking measurements taken by the authors could not have shown that the subjects failed to notice peripherally the telltale box containing the warning.

Yet noticing the warning box peripherally would have served to remind a subject that the warning was there. We do not see much practical difference between knowing that one of

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the Surgeon General's warnings is in an advertisement and knowing which one it is. One could analogize the warning box to an oversized "union bug" that instantly marks the work as a product of union labor but requires closer scrutiny to identify the union local that did the job. Another analogy, though perhaps ironic, might be to the Good Housekeeping Seal of Approval. You know it the moment you see it, and you know what it signifies -- without necessarily knowing what it actually says.

The authors do not report data that would allow us to understand why the warning was "seen" in some instances but not others. For example, we do not know whether some subjects failed to "see" the warning more frequently than other subjects. Did most of the subjects "see" the warning, and only a few fail to "see" it, in most of the advertisements to which they were exposed? Or did all of the subjects fail to "see" the warning with equal frequency? The authors do not say.

Assuming that each of the 45 subjects for whom usable data were available failed to "see" the warning with equal frequency, we do not know whether these not-"seen" exposures were evenly distributed in the five-exposure sequence, or instead were bunched toward the fourth and fifth exposures. If a subject focused on the warning in the first, second and third exposures, one would not necessarily expect him to have focused on the warning in the fourth and fifth exposures. (It would be difficult to determine the distribution of the not-

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"seen" exposures unless the 23 "lost" data were distributed randomly.)

One could not reasonably conclude that the Surgeon General's warnings are "ineffective" (in the authors' terms) simply because, confronted with an uninterrupted sequence of tobacco advertisements, the subjects in the study focused on the warning only in the initial exposures and then stopped once they "got the idea." Magazines commonly "space" advertising to permit a 10-page separation between advertisements in the same product category -- precisely to avoid this sort of overfamiliarization, which turns readers off. Perhaps the key missing figure in the Fischer, et al. article is the number of subjects who "saw" the health warning in <u>one or more</u> of the exposures. This number could well have been 45 out of 45. Again, the authors do not say.

Since nearly all adolescents believe smoking is dangerous, and presumably recognize the warning box in tobacco advertisements, one would not expect them to focus specifically on the Surgeon General's warning in every tobacco advertisement to which they are exposed. To the contrary, given their nearly universal awareness of the warning messages, it would be surprising if adolescents paused to read the messages anew each time they saw a tobacco advertisement -- regardless of any sequence used. It simply is not an efficient use of one's time to study a message with which one is already famil-

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iar. Our own research has consistently shown that material familiar to readers tends to be quickly bypassed.

The fact that relatively little time was spent focusing on the Surgeon General's warnings therefore can be understood to signify that the warnings are indeed extremely "effective." The subjects did not need to linger on the warnings because their message already was familiar. The fact that the adolescents participating in the study focused specifically on the Surgeon General's warning in 56.4 percent of the exposures can be interpreted as indicating that they examined the advertisements with special care.

Finally, the results of the study do not reflect the real-world experience of viewing cigarette advertisements. The authors found that the subjects spent an average of 8.95 seconds viewing a single advertisement. The subjects thus spent far more time viewing the advertisements in the study than they normally would have spent in the real world. Assuming that the typical magazine contains 100 advertisements, the Fischer, et al. study implies that, in the real world, its participants spend approximately 15 minutes viewing the advertising in the typical magazine. If any magazine could claim even half this amount of viewing time for its advertisements, it could set any advertising rate it wanted because it would stand head and shoulders above all competitors.

It is generally acknowledged that in a typical magazine environment an "average" advertisement receives approxi-

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mately three seconds of viewing time -- one-third the time reportedly spent by the subjects in the study. Cigarette advertisements receive the least amount of viewing time of any major print advertising category. This is because the typical cigarette advertisement is a quintessential "reminder" advertisement -- it grabs your attention, you see the picture and you go on to the next page. It is extremely rare for a cigarette advertisement to hold a viewer's attention for more than a couple of seconds. The enigmatic advertisements currently being run by Philip Morris for Benson & Hedges, which make you want to figure out "what is going on in the picture," are the exception that proves the rule. The 8.95 second average viewing time gives us cause to wonder what kind of "mental set" the subjects were given.

If the authors had wanted to replicate more faithfully the real-world experience of viewing cigarette advertisements in magazines, they might have equipped their subjects with eye view monitors and told them that the purpose of the study was to observe them reading test questions or new textbooks. The authors might then have allowed the subjects to look at actual magazines containing cigarette advertisements, if they chose to do so, while waiting for the "actual" trial to begin. To avoid any bias in their responses, the authors would not have told the subjects to look at the advertisements or even to look at the magazines. The authors might

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also have used product advertisements that do not carry warnings as a control.

Such a study might well have shown that adolescents typically do not even "see" cigarette advertisements (in the authors' sense) when reading a magazine. The notion that adolescents in the real world do focus on cigarette advertisements in magazines is another undemonstrated premise of the Fischer, et al. study. The authors avoided testing that premise by telling their subjects to look through a binder that contained nothing but tobacco advertisements. Such a study design could not have been expected to yield real-world results.

Conclusion

Given the premise with which the authors evidently began -- that the Surgeon General's warnings can be considered "effective" only if they are freshly read each time one sees a cigarette advertisement -- it was inevitable that Fischer, et al. would conclude from their study that the warnings are "ineffective." Nevertheless, their study does not show that adolescents are unaware of the Surgeon General's position on smoking or fail to notice the the Surgeon General's warning when they see a cigarette advertisement. Finally, notwithstanding the many important aspects of the study that the authors have chosen not to discuss, it is quite clear that the study does not reflect the real-world experience of viewing a cigarette advertisement.

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FOOTNOTES

(1) Smoking and Health: A Report of the Surgeon General, p. 17-10 (1979).

(2) Chilton Research Services, Teenage Smoking: Immediate and Long Term Patterns, pp. 18-19 (National Institute of Education, Dep't of Health and Human Services, 1979).

(3) Leventhal, H., Glynn, K., & Flemming, R. Is the smoking decision an 'informed choice'? JAMA. 1987, 257, 3373-3376.

(4) Krugman, "Low Recall and High Recognition of Advertising," Journal of Advertising Research. Feb/Mar. 1986, 79.

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Advertising Age,
12/11/1989, p. 34

FORUM

No escaping ads

Response to clutter: more clutter

By Rod Miller

Hardly anyone in the advertising business would disagree that clutter is a problem. As consumers are bombarded by more and more advertising messages, it becomes more and more difficult for advertising messages to get through.

So how are advertisers and agencies attempting to solve the problem created by clutter? By creating more clutter. Here's a list—compiled quickly and without much effort and certainly not exhaustive—of new clutter creators:

- Ads in toilet stalls, both on the ground and in flight.
- Ads on parking meters and garbage cans on city streets.
- Ads on grocery store shopping carts (including tiny video screens and safety belts), ads on shopping bags, even television monitors playing commercials at checkstands and in the aisles.
- Commercials on movie screens, on rented videocassettes (even little billboards on the box they come in), on giant screens at sporting events, and on television monitors at airport baggage claim areas.
- Advertisements sent to fax machines.
- Telephone sales calls to people at home (usually during dinner, it seems), from other people or—heaven forbid—computers.
- Commercials on the telephone while you're on hold.
- A wealth of specialty items from T-shirts to sunshades for windshields to fortune cookies.
- The much-publicized Channel One, in which school systems force-feed students commercials in exchange for a few television sets and VCRs.

And that's not to mention increasing clutter in traditional media: 15-second TV spots, more commercials on cable TV, more and more free-standing inserts falling out of newspapers, magazines stuffed with bound-in and blown-in response cards, mailboxes overflowing with unsolicited advertising, and so on.

Historically, advertising in America has been a two-way street: You put up with my advertising, and I'll pay (or subsidize) the cost of publishing or broadcasting my message *and* all the information and entertainment that surrounds it. It's an agreement that has worked well for both sides.

We're not only failing to give something to the consumer in exchange for putting up with our advertising, we often make them pay for the privilege.

Nowadays, it seems, we've lost sight of our part of the agreement. We're not only failing to give something to the consumer in exchange for putting up with our advertising, we often make them pay for the privilege. Do commercials in movies at theaters or on airplanes reduce ticket prices? Do all the ads that bombard us in supermarkets reduce the cost of food? Do unsolicited phone calls or fax messages reduce telephone rates? Does direct mail advertising reduce the cost of postage stamps?

And talk about a captive audience. It used to be that consumers could shut off the television or radio or turn the page and avoid advertising. But you can't avoid the advertisement on the movie screen or your shopping cart or in the classroom or on the telephone or the fax machine. Today, there's no escaping advertising.

We've been lucky so far, but unless we restrain ourselves, there's bound to be a backlash. And when it comes, the government will probably restrict and regulate and restrain commercial speech with support (or at least apathy) from the very people we spend our lives bombarding.

It's a problem that grows more important every day, but it is by no means a new one. Listen to what E.B. White wrote some 50 years ago:

"One wonders how much longer the human race will string along with its own electrical gifts, and how long the right to speak can remain innocent of wattage. We have a feeling that only if this issue is met will the principle of free speech survive. There are always plenty of people who are eager to stifle opinion they don't admire, and if the opinion happens to be expressed in a volume of sound that is in itself insufferable, the number of people who want to stifle the sound *and* the fury will greatly increase. Amplification, therefore, is something like alcohol: it can heighten our meanings, but it can also destroy our reason."

He was writing about sound trucks, of all things. □

Mr. Miller is creative director at Fotheringham & Associates, a Salt Lake City advertising agency.

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Campbell Soup Co., for one, has concluded that it makes good sense to focus more on its most loyal customers than on people who buy competitive brands. "The probability of converting a non-user to your brand is about three in 1,000," says Tony Adams, the company's vice president for marketing research. "The best odds are with your core franchise. Our heavy users consume two to three cans of soup a week, and we'd like to increase that."

So Campbell is talking to its "brand enthusiasts," probing their psychological attachment to its soup. In one consumer focus group, a fan declared that, "Campbell's soup is like getting a hug from a friend." That helped persuade the company to introduce a new advertising slogan: "A warm hug from Campbell's."

DATE October 13, 1989
TIME 10:22 PM
STATION WCBS-AM Radio
LOCATION New York City
PROGRAM CBS Network News

Craig Butterworth(?) reporting:

Philip Morris is putting on the ritz with a new cigarette that's not for everybody. It's called Cartier Vendome and spokesman, Steve Weiss, says it's just the thing for those with discriminating taste.

Steve Weiss (Philip Morris): There are sixty million people in this country who have made a choice to smoke, and among those, discerning smokers who want an elegant and refined cigarette and a luxurious cigarette, we think Cartier Vendome is going to be very successful.

Butterworth: The new cigarettes won't be cheap, however. A twenty pack will fetch three dollars, while a ten pack will sell for about the same price as a twenty pack of regular cigarettes. The product is currently being marketed in Los Angeles and company officials hope to have it in luxury hotels and resorts nationwide within the next few months. Craig Butterworth for CBS news, Richmond.

# # #

A16 THE WALL STREET JOURNAL THURSDAY, OCTOBER 19, 1989

WORLD WIRE

COFFEE FOR KOREA

Nestle Korea Ltd. opened a coffee and non-dairy-creamer plant in Chongju, South Korea. An official at Nestle Korea, a 50-50 joint venture between Nestle S.A. and the Doosan Group, said the new facility will manufacture all types of soluble, roasted and ground coffee, coffee mix and non-dairy coffee creamer. The South Korean coffee market, consisting mostly of instant coffee, was estimated at about 100 billion won ($150.7 million) last year. Brands made by the Kraft General Foods unit of Philip Morris Cos. had about 95% of the market share. Nestle currently has only about a 2% share with its Taster's Choice coffee.

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SELECTED SOURCE MATERIAL
CIGARETTE ADVERTISING AND "TARGETING"

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

CIGARETTE ADVERTISING AND "TARGETING"

Selected Source Materials

Note 8 -- Lewit, "Tobacco in Developing Countries," p. 45 (Harvard Institute for the Study of Smoking Behavior and Policy, Discussion Paper Series, March 1988)

Note 10 -- C. Chollat-Traquet, *Women and Tobacco* (World Health Organization, 1992)

Note 11 -- U.S. Cigarette Export Association, "Worldwide Decline in Smoking," March 16, 1992

Note 23 -- H. Thurmer, K. Bjartveit & A. Haukness, "Smoking among Norwegian Doctors," *Smoking Behaviour and Health 1987* (eds. M. Aoki, S. Hisamichi & S. Tominaga 1987)

Note 24 -- T. Sanner *et al.*, "Action Plan 'Smoke-Free Norway Year 2000,'" *Proceedings of the 7th World Conference on Tobacco and Health*, 317 (Perth, 1991)

Note 30 -- Ingrid Waldron, et al., *Gender Differences in Tobacco Use in Africa, Asia, the Pacific and Latin America*, Social Science and Medicine 27 (11), 1269 - 75 (1988)

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Note 8 Lewit, "Tobacco in Developing Countries," p. 45 (Harvard Institute for the Study of Smoking Behavior and Policy, Discussion Paper Series, March 1988)

FULL COPY OF THE TEXT IS INCLUDED IN THE SOURCE DOCUMENTATION FOR THE INTERNATIONAL EXPERIENCE WITH CIGARETTE ADVERTISING BANS.

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WOMEN AND TOBACCO

WORLD HEALTH ORGANIZATION
GENEVA

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The author alone is responsible for the views expressed in this publication.

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Preface

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This book represents the consolidation of a number of activities undertaken by WHO in recent years to review the available evidence on tobacco use by women and to identify the most promising strategies for tobacco control.

The events leading to the publication of this book began on 31 May 1989, the second World No-Tobacco Day, when a round-table meeting on "women and tobacco" was held at WHO headquarters in Geneva. It was subsequently agreed that the proceedings of this meeting should be edited and a paper produced on the subject. In the course of the preparation of this paper, it became clear that the subject deserved more extensive consideration. Accordingly, information on women and tobacco was gathered from a variety of countries and a draft monograph was produced. The monograph was reviewed by a group of experts who met in Geneva from 10 to 14 June 1991, following which it was revised.

This book is intended to inform all those concerned with this previously under-researched and under-publicized subject. It is primarily aimed at decision-makers and, in particular, at the staff of ministries of health, education, labour and social welfare, legislators, nongovernmental organizations and community leaders. It is also expected that this monograph will prompt the opening of new avenues of research and the more systematic documentation of issues relating to women and tobacco.

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Chapter 1

Women and tobacco: the issues at stake

Women smokers are numbered in millions throughout the world, and several million more are dependent on tobacco used in other ways. The number of women smokers increases daily, not only because of the world's fast-growing population, but also because smoking cigarettes is being fostered and encouraged worldwide for commercial gain and, in spite of incontrovertible evidence on the toll of death, disease, and disability that is being caused, many governments have remained ambivalent towards a problem that has implications for excise and tax revenue, health and welfare expenditure, and political expediency.

The incidence of smoking-related diseases and concomitant death rates have increased rapidly among women in many developed countries in recent years. In most countries, there are no epidemiological indications of a likely decrease in the near future and the continuing uptake of smoking in these countries gives cause to expect a continuing increase in both disease incidence and death rates. In most developing countries, cigarette smoking, so far maintained at a low level, is being fiercely promoted by the tobacco companies. As more women become dependent on tobacco, the effect will be an inexorable toll on health and well-being; and the impact will be such as to prevent the achievement of WHO's goal of health for all by the year 2000.

Tobacco use can be compared to an epidemic; it spreads within societies and from one society, and one population, to another. There follows in its wake an epidemic of smoking-related disease, albeit after a lapse in time. In the absence of tobacco, some diseases such as lung cancer might be almost nonexistent in women, and others such as ischaemic heart disease and chronic lung disease would be rarer.

Until recently, the incidence and mortality rates from smoking-related diseases had been much lower among women than

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among men and suppositions that women may be more resistant to tobacco have arisen. It is now clear, however, that women are not only susceptible to the same tobacco-related diseases as men, but are also affected by other specific conditions.

In the developed countries, where smoking by women is well established, the challenge is twofold: to halt the rapid escalation in tobacco dependence that is currently occurring in many areas and to register more success in reducing the prevalence and intensity of smoking by women.

There are many areas of the world, particularly in the developing countries, where tobacco use is still at a low level and may as yet even be nonexistent among women. Here is where future disease could be effectively prevented. There is, however, a lack of knowledge on tobacco use by women in most countries and efforts to obtain more factual information are needed so that countermeasures can be developed and used more effectively.

While there is a need for further information, there is sufficient evidence for public health action on tobacco use by women not to be delayed. This monograph is thus intended to provide background information on a wide range of aspects of smoking by women and to identify the strategies available to combat the growing problem of tobacco use among women.

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Chapter 2

Women and tobacco use: patterns and trends

Tobacco is the single largest cause of premature adult death throughout the world. Over the next 30 years tobacco-related deaths among women will more than double, so that by the year 2020 well over a million adult women will die every year from tobacco-related illnesses. Currently, in the developed world, the prevalence of smoking among women is approximately 20–35%, whereas in the developing world, it is estimated at 2–10%.

In the developed countries, smoking by women was socially unacceptable for many years. However, by the mid-20th century, in most developed countries, smoking by women had increased rapidly. As the health hazards of tobacco became apparent, the prevalence of smoking among men declined in some developed countries. Prevalence rates among women did not begin to decline until later and then only in a few countries; the two rates are currently converging in several countries. Today, in many developed countries, smoking is predominantly a practice of young women, women with limited education, and women of low socioeconomic status.

In the past, cultural norms were a powerful deterrent to women's smoking in the developing world, although there have always been areas in which women have practised traditional forms of tobacco use. Currently, in the developing world, smoking is linked with a cosmopolitan and affluent life-style. With increasing urbanization and career-oriented education, and increasing spending power, many young women who aspire to this life-style have taken up smoking. There is grave concern that these aspirations, fuelled by aggressive tobacco marketing, will result in increased prevalence rates among women in developing countries, further compounding their present difficulties.

This chapter provides the statistical evidence for urging strong tobacco control efforts in both the developed and developing world to decrease the epidemic of tobacco use among women. While there is already enough evidence to justify urgent action, knowledge of the overall situation among women in developing countries is hampered by cultural reticence to admitting to tobacco use and by the scarcity of survey data. To complement tobacco control interventions more effectively and to monitor future trends, continuous surveillance will be needed.

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Tobacco (*Nicotiana*, a member of the Solanaceae family) is a native plant of the Americas, where it was used for ceremonial and medicinal purposes for thousands of years by many of the indigenous populations. It is believed that the practice of smoking was also known in Asia long before Columbus visited the New World. Tobacco was one of many plants brought from North America to Europe in the 1500s by the early European explorers and the use of tobacco quickly spread through the European populations. Tobacco was also introduced to other continents as early as the 1600s by explorers and missionaries. In Europe, Portuguese men were the first users of tobacco (usually smoked in pipes), but European women also used tobacco, both in pipes and as snuff. During this period, arguments for sexual equality were already being made to gain permission and social acceptability for women's smoking.

The advent of machine-manufactured cigarettes in the late 1800s was a major factor in cigarettes becoming the dominant form of tobacco use in the early twentieth century. Colonization in many parts of the world brought about dramatic changes in agricultural patterns; colonized countries were encouraged to grow tobacco, and they continued to do so after independence because of the substantial earnings from tobacco exports, making it the most widely grown commercial non-food plant in the world. Through exploration, advertising, marketing, and widespread tobacco cultivation, cigarette use continued to spread throughout the world, and progressively became superimposed upon traditional tobacco uses.

Smoking has not always been socially acceptable for men and it has been even less so for women. In 1606, two University Decrees were issued by Cambridge University which prohibited any student or other member of the University from drinking excessively or using tobacco. During the 1800s and early 1900s, tobacco use by women and children was largely unacceptable. In most developed countries, smoking by women was considered to be vulgar, improper and even immoral, and the anti-smoking movements in several countries were often led by women or women's organizations. Opponents of tobacco believed that it exploited the poor and was immoral, unhealthy, hazardous and unfeminine; however, such attitudes began to change with the coming of women's emancipation, combined not only with their increasing employment in paid occupations but also their development of careers of their own and a decreasing dependence on men for their livelihood.

During the First World War, sending cigarettes to soldiers was deemed patriotic, which effectively put an end to the organized anti-smoking movement. As women became more emancipated in North America and Europe, through suffrage and dress reform, smoking became increasingly acceptable.

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In the 1920s, women started smoking in public as a sign of emancipation and equality, although they smoked considerably fewer cigarettes than men (2.4 versus 7.2 cigarettes per day on average in the United States in 1929). Smoking became fashionable in the 1930s, particularly among women in the cities; in the United States, 18.1% of women and 52.5% of men were smokers by 1935.

During the Second World War, as women contributed to the national war effort, smoking by women became associated with going out to work, and with independence, emancipation and patriotism. Women were not only working like men, but adopting their behaviour as well. After the war, the prevalence of smoking among women was about 40% in the United Kingdom, 30% in Australia and 25% in the United States.

- In the United Kingdom, by 1950 the prevalence of smoking was 38% for women and 62% for men. Prevalence rates among women reached 45% in 1966 before starting to fall as the risks of smoking became evident (*1*).

Although some studies had been carried out in 1939 and in the 1940s (mainly in Germany and the Netherlands), there was little scientific evidence on the harmful effects of tobacco use until the 1940s. In 1950, it began to be recognized that cigarette smoking was associated with serious disease risks. A number of studies carried out in the United Kingdom and the United States showed an association between smoking and certain forms of cancer, particularly lung cancer.

Nevertheless, cigarette sales continued to increase throughout the developed world until the mid-1970s, when information campaigns against tobacco began to take effect. During the 1970s and 1980s, stagnation in the growth of the global tobacco economy due to reduced demand became evident. As profits are threatened, the tobacco industry has started massive marketing in the developing countries. Long-term expansion will be seen in developing countries because of their dependence on the substantial export earnings from tobacco and revenue from domestic use. Moreover, the public health campaigns about the hazards of tobacco use are at an early stage in many developing countries.

In some countries, the change from traditional forms of tobacco use can be seen as recently as during the last 20 years. In Bangladesh the majority of smokers used hookah in the 1970s, while the recent smokers are beginning to take up bidi smoking.

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Global overview

Tobacco use

The foremost way in which tobacco is used throughout the world is for smoking in cigarettes, but in some developing countries, although cigarette use has increased since the 1940s, other traditional uses continue to predominate, particularly among rural and isolated communities.

Tobacco use can be classified under six principal headings: as cigarettes, bidis, cigars, pipe tobacco, snuff and for chewing. There are variants of usage within each group. Thus, for example, in addition to manufactured ("white") cigarettes, kreteks (cigarettes containing tobacco and cloves) are smoked in Indonesia, and papyrosi (cigarettes in which the conventional tip is replaced by a long paper tube) are smoked in many parts of the USSR.

The tobacco in manufactured cigarettes is cut in very thin strands, approximately 1 mm in diameter, and a form of "fine cut" tobacco is sold loose for smokers to roll their own cigarettes. Hand-rolled cigarettes usually yield more tar and nicotine, because the tobacco is stronger and the paper used is also thicker and less permeable than the wrapper of manufactured cigarettes; on the other hand, they often contain less tobacco than manufactured cigarettes.

The bidi (beedi, biri) is common throughout south-east Asia and consists of tobacco flakes or powder, loosely packed and rolled in a dried tendu or temburni leaf. The dhumti in India is similar, but the tobacco is rolled in a leaf of the jackfruit tree. Other bidi-like smoking devices may have banana leaves or even newspaper as the wrapper.

Cigars are made from cured tobacco leaves rolled and wrapped in a dried tobacco leaf and are produced in a variety of shapes and sizes. They are also known by different names in different localities: e.g. the cheroot and chutta in India; and khi yo, ya muan and tra kai in regions of Thailand. All these traditional smoking devices tend to use oriental or native varieties of tobacco and the smoke is invariably extremely strong, containing high levels of tar, nicotine and carbon monoxide.

Pipe smoking, probably the oldest recorded form of smoking, is practised in almost all countries and the shapes and names for pipes are legion. However, one variety of pipe common to almost all countries in the Eastern Mediterranean and parts of Asia is the water pipe (hookah, goza or hubble-bubble), a device in which the smoke bubbles through water before being inhaled. The hookah apparatus also has many shapes, sizes and names in different countries or areas in which it is common. Hookah tobacco shows regional variations;

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it may contain only cured tobacco leaves or the tobacco may have been fermented in molasses, honey or fruit juices. The smoke again tends to be strong but is rendered less harsh by being bubbled through the water; however, it has a high carbon monoxide content because the tobacco is ignited and kept alight by covering it with pieces of glowing charcoal. In some Eastern Mediterranean countries, hookah smoking by women is often a social event.

Snuff is used in two different forms: as dried, finely powdered tobacco which is inhaled through the nostrils or as moist, coarsely ground tobacco which is retained in various parts of the mouth.

When tobacco is chewed, it is usually mixed with other materials. For example, pan masala ("pan") is extremely common in India where it is used by at least 20 million people, and may contain some of the following substances: tobacco, betel nut, dried dates, catechu, slaked lime, menthol and spices such as cardamom, clove, mace and cinnamon. Obviously the mixture can vary and tobacco does not always have to be one of the ingredients. Throughout south-east Asia and in many North African and Eastern Mediterranean countries, tobacco is chewed in combination with flavourings, frequently lime, and has many names: gazare (Afghanistan and Pakistan), mainpuri and naswar (Pakistan), makla (Algeria), alshammah (Saudi Arabia), shammah (Yemen), khaini (India and Nepal), nachouk (Egypt) and zarda, which is used in Nepal and includes perfumes and spices and in its more expensive forms, musk.

Mishri (masheri) is a form of burnt tobacco which is used for cleaning teeth and is often retained in the mouth. In many developing countries where smoking by women is often socially unacceptable, tobacco chewing seems to be more acceptable and is relatively widespread. Reverse smoking, where a chutta, dhumti or bidi is smoked with the lighted end in the mouth is often more common among women in areas where their smoking is acceptable.

Tobacco-related morbidity and mortality

Currently, tobacco use is estimated to account for 3 million deaths per year, about half a million of which are among women, reflecting their previous patterns of tobacco consumption. Slightly more than half of these deaths occur in the developed world, where smoking has been at a higher level and over a longer period than in the developing world. Over the past decade or so, there have been significant changes in consumption patterns, with consumption and smoking prevalence rising in many developing coun-

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tries, especially among men, but remaining unchanged or even falling considerably in some developed countries, most notably the United Kingdom and the United States.

- In China, for example, which accounts for almost one-third of the entire population of the developing world, the consumption of cigarettes increased from 500 thousand million in 1978 to 1400 thousand million in 1987. This represents one-quarter of the world's total cigarette consumption; in 1990, this proportion had risen to about 30%. About 61% of Chinese men smoke, compared with slightly less than 7% of women over 15 years of age (*2*).

Surveys conducted during the 1980s indicated that in almost 60% of developing countries, fewer than 10% of women were smokers, compared with about 30% of women in most developed countries. Among women, death rates from lung cancer, a very reliable marker of the evolution of the cigarette smoking epidemic, are rising virtually throughout the developed world and consequently the full effects of the massive adoption of cigarette smoking by women after the Second World War are yet to be seen.

In many developing countries, low life expectancy has masked the onset of the chronic smoking-related diseases. However, as life expectancy in these countries improves, the effects of the continuing adoption of smoking by women will become more evident. In Brazil, for example, it is projected that life expectancy will reach about 68 years of age by the year 2000; however, it is likely to remain considerably lower in Africa for the foreseeable future. Nevertheless, a decisive factor affecting the mortality from smoking-related diseases will be the rates at which women take up smoking in these countries, which is influenced by factors such as traditions, social and cultural norms, beliefs, income and the targeting of women by the tobacco industry through advertising.

In view of these trends, what will be the likely future health effects of previous tobacco consumption, particularly smoking? At the global level, the annual number of tobacco-related deaths is expected to rise dramatically from 3 million to about 10 million by the year 2020; many of these deaths will be among women. Only if there were to be a substantial fall in smoking prevalence among adolescents would this epidemic of tobacco-related deaths be moderated, since the majority of these deaths will occur among the youth and young adults of today, born between about 1950 and 1980, precisely the period when cigarette smoking was adopted extensively on a worldwide scale. Conversely, the majority of the tobacco-related deaths which occur today are among smokers born before 1950. Of the projected 10 million tobacco-related deaths in the year 2020, about 3 million are expected to occur in China alone on the basis of current smoking patterns. However,

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if the prevalence of smoking among women increases in developing countries, future projections will need to be revised upwards.

Worldwide prevalence of tobacco consumption by women

While the extent of the epidemic of tobacco-related deaths can be deduced for developed countries where vital statistics and data on the prevalence of smoking are readily available, precise prevalence data for tobacco use in individual developing countries are less readily available, especially the prevalence of smoking among women. Assessing the epidemic is thus more difficult. The best available data, presented in Tables 1–6, give an indication

Table 1. Prevalence of cigarette smoking among women in the Region of the Americas*

Country	Prevalence (%)	Date of survey	Source
Argentina	27 (38)†	1988	(a)
Bahamas	4	1989	(b)
Bolivia	38	1986	(c)
Brazil	33 (30–33)†	1990 (1986)	National survey
Canada	25.8	1986	(b)
Chile	31 (58)†	1988	(a)
Colombia	18 (21)†	1988	(a) (d)
Costa Rica	20 (12.4)†	1988 (1986)	(a) (d)
Cuba	25.5	1988	(e)
Dominican Republic	13.6	1989	(e)
Ecuador	16 (8)†	1988	(a) (d)
El Salvador	12	1988	(a) (d)
Guatemala (urban areas)	17.7 (4)†	1989 (1987)	(e)
Guyana	4	—	(e)
Honduras	11	1988	(a) (d)
Jamaica	27 (6.2)†	1988 (1989)	(d)
Mexico	17	1988	(d)
Panama	20	1983	(e)
Paraguay	(7)†	NA	NA
Peru	17	1988	(a) (c) (d)
Trinidad and Tobago	5	1986–89	NA
United States of America	26	1990	(e)
Uruguay	23 (44)†	1988	(a)
Venezuela	23 (34)†	1988	(a) (d)

* No data are available for Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Haiti, Nicaragua, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Suriname.

† Data refer to women of childbearing age.

(a) Gallup, 1988.

(b) National health department.

(c) American Cancer Society.

(d) WHO/PAHO: CD33/24, Rev. 1 (unpublished document; available from WHO Regional Office for the Americas, Washington, DC 20037, USA).

(e) Indicative figures collected by WHO from various sources.

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Table 2. Prevalence of cigarette smoking among women in the European Region*

Country	Prevalence (%)	Date of survey	Source
Austria	28	1984	(a)
Belgium	28	1988	(b)
Bulgaria	17	1989	(a)
Czechoslovakia	28	1990	(c)
Denmark	45	1988	(b)
Finland	20	1988	(a)
France	30	1991	(a)
Germany	27	1988	(b)
Greece	26	1988	(b)
Hungary	23	1986	(a)
Iceland	32	1990	(d)
Ireland	31	1988	(b)
Israel	25	1988	(a)
Italy	26	1988	(b)
Luxembourg	30	1988	(b)
Malta	22	1991	(c)
Netherlands	37	1988	(b)
Norway	34	1990–91	(a)
Poland	35	1989	NA
Portugal	12	1988	(b)
Spain	28	1988	(b)
Sweden	26	1986–89	(d)
Switzerland	28	1989	(a)
USSR (Moscow)	10†	1986	NA
United Kingdom of Great Britain and Northern Ireland	32	1988	(b)
Yugoslavia	36†	NA	(c)

* No data are available for Albania, Belarus, Monaco, Romania, San Marino and Turkey.
† Data refer to a limited area.
(a) Communication from Member States.
(b) Europe Against Cancer.
(c) Countrywide Integrated Noncommunicable Diseases Intervention programme (CINDI).
(d) Indicative figures collected by WHO from various sources.

Table 3. Prevalence of cigarette smoking among women in the African Region*

Country	Prevalence (%)	Date of survey	Source
Côte d'Ivoire	1	1981	(a)
Ghana	1–6	NA	(a)
Guinea	1	1981	(a)
Mauritius	7	1986–89	(a) (b)
Nigeria	10	1990	(c)
Swaziland	7	1989	(a)
Zambia	4–7	1984	(a) (b)

* No data are available for Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verdi, Central African Republic, Chad, Comoros, Congo, Equatorial Guinea, Ethiopia, Gabon, Gambia, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Togo, Uganda, United Republic of Tanzania, Zaire and Zimbabwe.
(a) Indicative figures collected by WHO from various sources.
(b) Reference *3*.
(c) *Tobacco and society in Nigeria: research trends in production, promotion and consumption of cigarettes*. Paper presented at the 7th World Conference on Tobacco and Health, Perth 1990.

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Table 4. Prevalence of cigarette smoking among women in the Eastern Mediterranean Region*

Country	Prevalence (%)	Date of survey	Source
Bahrain	20	1985	(a)
Cyprus	8	1991	(a)
Egypt	2	1981	(a)
Iraq	5	1990	(a)
Jordan	18 students	1989	(b)
Kuwait	12	NA	(a)
Lebanon	39 students	1975	(a)
Morocco	9.1–14.9	NA	(c)
Oman	3–9	1990	(a)
Pakistan	6 (39 users)	1982	(a)
Qatar	3–9	1990	(a)
Sudan	19	1986	NA
Tunisia	6	1984	(a)
United Arab Emirates	3–9	1990	(a)

* No data are available for Afghanistan, Djibouti, Islamic Republic of Iran, Libyan Arab Jamahiriya, Saudi Arabia, Somalia, Syrian Arab Republic and Yemen.
(a) Indicative figures collected by WHO from various sources.
(b) *Jordan times*, 30 May 1989.
(c) The prevalence of smoking among women in Morocco was given as 14.9% in reference *4*; however, information received by WHO from the Ministry of Health, 26 March 1990, indicated that the prevalence was 9.1%.

Table 5. Prevalence of cigarette smoking among women in the South-East Asia Region*

Country	Prevalence (%)	Date of survey	Source
Bangladesh	20 (1)†	1984 (1982)†	(a) (c) (d)
India	3‡	1984	(c)
Indonesia	10 (3.6)	1990 (1986)	(b) (e)
Mongolia	7	1991	(a)
Myanmar	29†	1989	(b)
Nepal	58	1991	(a)
Sri Lanka	1–3.3§	1989	(f)
Thailand	4	1988	(g)

* No data are available for Bhutan, Democratic People's Republic of Korea and Maldives.
† Data refer to women in rural areas and women in two poor village populations, respectively.
‡ Data refer to smokers in a rural community. Use of tobacco by women in India may vary from 0% to 67%, depending on the area chosen and the form of tobacco use surveyed.
§ Data refer to a survey of 1% of towns, 3.3% of suburbs and 1% of villages in Sri Lanka.
(a) Indicative figures collected by WHO from various sources.
(b) Reference *3*.
(c) *Smoking and Health*. Report of a WHO Regional Seminar.
(d) Cohen N. Smoking and survival prospects in Bangladesh. *World health forum*, 1982, 3: 441 – 444.
(e) In: Durston B, Jamrozik K, ed. *The global war. Abstracts of the 7th World Conference on Tobacco and Health, Perth, 1 – 5 April 1990*. Perth, Health Department of Western Australia, 1990, p. 241. Results of household surveys conducted in 1980 and 1986 are given as 3.1% and 3.6%, respectively.
(f) *Smoking patterns in Sri Lanka 1989*. National Cancer Control Programme, Sri Lanka.
(g) *Health and Welfare survey on tobacco use, 1988*. Updated in March 1990 by H. Chitanondh, National Committee for Control of Tobacco Use, Ministry of Public Health, Thailand.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Table 6. Prevalence of cigarette smoking among women in the Western Pacific Region*

Country	Prevalence (%)	Date of survey	Source
Australia	27	1986–89	(a)
Brunei Darussalam	7	1980	(b)
Cambodia	—†	1990	(b)
China	8.28 (7.04)‡	1984	(c)
Cook Islands	19	1978	(d)
Fiji (Melanesian)	44§	1980	(d)
Fiji (Indian)	13**	1980	(d)
Japan	14.3 (12.7)	1990 (1989)	(b)
Kiribati	—† †	—	(d)
Malaysia	5	1990	(e)
New Zealand	26	1986–89	(b)
Papua New Guinea	80‡ ‡	1990	(e)
Philippines	18.7 (21.9)	1988 (1990)	(f) (e)
Republic of Korea	6.8	1990	(g) (f)
Samoa	22§ §	1978	(d)
Singapore	2.4	1988	(b)
Solomon Islands	10 (33)	1989 (1990)	(f) (e)
Tonga	8	1990	(e)
Vanuatu	10	1990	(e)
Viet Nam	0.3–3.4	1990	(e)

* No data are available for Federated States of Micronesia, Lao People's Democratic Republic, Marshall Islands and Tokelau.

† Prevalence rates among urban and rural populations were 3% and 10%, respectively.

‡ Data refer to prevalence among women over 20 years of age. Figure in parentheses refers to prevalence among women over 15 years of age.

§ Prevalence rates among urban and rural populations were 33% and 50%, respectively.

** Prevalence rates among urban and rural populations were 4% and 22%, respectively.

† † Prevalence rates among urban and rural populations were 74% and 66%, respectively.

‡ ‡ Data refer to a small study of women in certain rural areas.

§ § Prevalence rates among urban and rural populations were 17% and 27%, respectively.

(a) Hill DJ, White VM, Gray NJ. Australian patterns of tobacco smoking in 1989. *Medical journal of Australia*, 1991, 154: 797–801.

(b) Indicative figures collected by WHO from various sources.

(c) Reference 2.

(d) Reference 5.

(e) Regional Working Group on Tobacco or Health, Australia, March 1990.

(f) WHO Regional Office for the Western Pacific. Report of Regional Working Group on Tobacco or Health, Perth 1990.

(g) Hae Sook Lee, Il Soon Kim. Cigarette smoking rates for Koreans for the past 80 years – birth cohort analysis. In: Durston B, Jamrozik K, ed. *The global war. Abstracts of the 7th World Conference on Tobacco and Health, Perth, 1–5 April 1990.* Perth, Health Department of Western Australia, 1990, p. 163.

of the prevalence of smoking among women in the various WHO Member States; however, the quality of the data is variable and the figures should be taken only as a general illustration of comments in the following chapters.

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Developed countries

The current situation

In developed countries, the prevalence and intensity of smoking among women show marked variations, depending on factors such as the duration of smoking, the age at which smoking starts, socioeconomic background, educational attainment and nature of occupation. These factors are discussed in Chapter 4. In general, the countries in which smoking was first taken up were the first to show a decline in the prevalence of smoking among women. It should be noted that even in some European countries, such as Greece and Spain, the prevalence of smoking among women appears still to be increasing.

Currently, in some developed countries, the numbers of men and women who smoke are converging, albeit at different rates (Table 7), but with fewer men than women taking up smoking, even this equalization may be destroyed and more women than men may become dependent on tobacco.

- In Australia and the United States, men and women are quitting smoking at about the same rate but more young women than young men are taking up smoking; as a result, the gap between male and female smoking prevalence rates has closed (*6, 7*). It has been predicted (*8*), on the basis of current trends in the United States, that there will be more female smokers than male smokers by 1996.
- In Canada, 3.2 million women and 3.3 million men were smokers in 1989 (*9*).

In addition, there are many other developed countries where the prevalence of smoking among women is not declining as rapidly as it is among men, thus there may also be more female smokers than male smokers in the future. For example, Table 7 suggests that there has been a significant decline in the prevalence of smoking among women in Canada and the United Kingdom and a stabilization or even a very slight decrease in Australia and the United States of America. The data for Finland suggest a slight increase in prevalence among women in the late 1980s.

Prevalence data do not give the total picture, since the ways in which women smoke will also influence the effects tobacco will have on their health. In general, women smoke fewer cigarettes than men and these tend to be lower in tar and nicotine; their patterns of inhalation may also be different. They rarely smoke pipes or large cigars and the use of small cigars tends to be restricted to women in a few social groups and even then only on a few social occasions. Unlike the situation prevailing in many developing

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Table 7. Prevalence of cigarette smoking in five developed countries

Country	Year							
Australia[a]	1945	1964	1969	1976	1980	1986	1989	
Men (%)	72	58	45	40	40	32	30	
Women (%)	26	28	28	31	31	29	27	
Canada[b]	1965	1970	1975	1981	1983	1985	1989	
Men (%)	61	65	51	44	41	36	33	
Women (%)	38	38	38	35	34	32	30	
Finland	1965	1970	1975	1980	1985	1989		
Men (%)	57	44	40	37	35	34		
Women (%)	14	16	17	16	17	20		
United Kingdom[a]	1956[c]	1961[c]	1965[c]	1972	1976	1980	1984	1988
Men (%)	75	72	68	52	46	42	36	33
Women (%)	42	44	43	41	38	36	32	30
United States of America[d]	1955	1965	1970	1976	1980	1983	1987	1988
Men (%)	53	50	44	42	38	35	32	31
Women (%)	25	32	31	31	29	29	27	26

[a] Data refer to prevalence of daily smoking at 16 years of age and above.
[b] Data refer to prevalence of smoking at 15 years of age and above.
[c] Includes all forms of smoking.
[d] Data refer to prevalence of regular smoking (see Annex 1).
Source : WHO Country Database.

countries, particularly among rural populations, tobacco chewing is rare among women in developed countries.

The situation in eastern Europe and Japan is different from that in other developed countries. In Japan the proportion of women who smoked increased to about 15% during the early 1980s; it has since fallen slightly, but is still high compared with other Asian countries. The low prevalence of smoking among Japanese women relative to women in other developed countries is probably due to the unavailability of cigarettes immediately following the Second World War, combined with traditional attitudes against women smoking. However, current estimates suggest that 12% of girls aged 13–15 years and 26% of girls aged 16–18 years smoke, and health authorities in Japan state that those who leave school early smoke much more. If these higher smoking rates among teenagers persist into adulthood, women in Japan will face appalling health consequences in the future.

There are considerable variations in the patterns of tobacco use in the countries of central and eastern Europe. In some countries, such as Czechoslovakia, Hungary and Poland, smoking fol-

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lows a pattern similar to that in other developed countries, especially among the urban population; however, in rural areas of these countries, as well as in Bulgaria, Romania and large parts of the former USSR, smoking is rather uncommon and follows more traditional patterns. Following the Second World War, however, the appointment of women in the USSR to posts traditionally occupied by men, linked to an aspiration to equality, led to an increase in tobacco smoking in certain population groups; even so, it is still not considered acceptable for women in the USSR to smoke on public transport, in theatres and in most public places.

Statistics on the overall prevalence of smoking, while giving a broad indication of tobacco use in a population, conceal very significant differences in smoking patterns among population subgroups. In some countries, such as Spain, women have only recently begun to smoke in significant numbers, with virtually all this uptake being confined to younger women. Figure 1 illustrates that the prevalence of smoking among Spanish women below 45 years of age is of the order of 40–50%, compared with 2–5% among those aged 45 years and over. This age pattern is typical of many developed countries and points to a future epidemic of smoking-related deaths among women unless smoking cessation programmes are successful. On the other hand, the comparatively low rates of lung cancer among women in France, Portugal and Spain reflect the low prevalence of smoking among women in the past. In other countries, such as Denmark, the United Kingdom and the United States, where smoking has been common among women of all ages, lung cancer death rates are much higher.

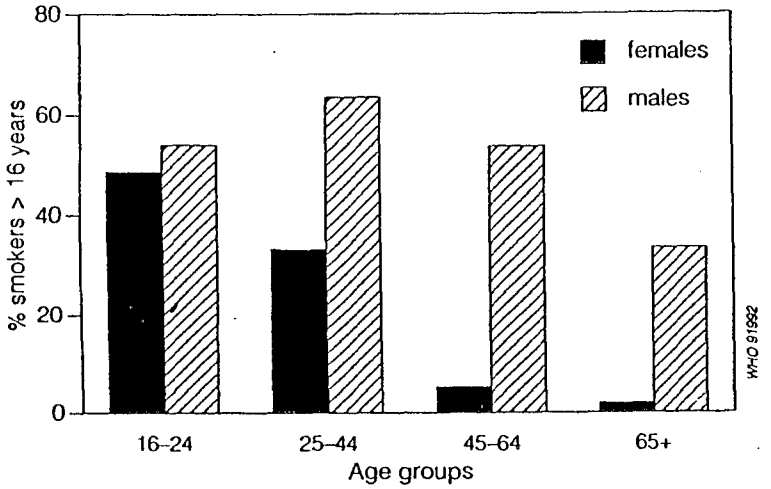
Young women and smoking

The changing patterns of smoking among girls can be used to predict not only future patterns of tobacco-related morbidity and mortality, but also changes in smoking prevalence in the female population. The health risks associated with smoking are directly related to the age at which smoking starts and the duration of dependence (see Chapter 3). Almost a thousand million packs of cigarettes are illegally sold to youngsters in the United States each year, and it is known that the younger the age at which individuals take up smoking, the more likely it is that they will continue to smoke throughout their lives; about 90% of adult smokers take up smoking as children and adolescents.

The WHO Cross-National Survey of Health Behaviour in School-age Children, undertaken in 1986 in ten European countries (Table 8), showed a higher prevalence of smoking among

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Fig. 1. Distribution of smokers by sex and age in Spain, 1987



Source : National health survey, 1987.

young women (aged 15 years) than young men in five of these countries. In other countries, such as Denmark, Germany and the United States, surveys have shown higher rates of smoking among young women (aged 14–19 years) than among young men (*10*). It appears that in many countries the prevalence of smoking among girls is the same as that among boys, and what is threatening for the future is that tobacco consumption is high in both groups.

- In Finland, recent declines in smoking among teenage girls have been reversed (*11*), while in Canada in 1987, smoking prevalence was growing fastest among teenage girls (*12*).
- Among women in the United States, the average age of starting regular smoking has progressively declined with each successive birth cohort – from 35 years of age for those born before 1900, to 16 years of age among those born between 1951 and 1960 and is now virtually identical to that of young men. Every day more than 1600 American teenage girls smoke for the first time, and by 17–19 years of age, smoking prevalence among women exceeds that among men (National census).
- In the United Kingdom, the prevalence of smoking among boys was higher than among girls in 1986; in 1991 it is estimated that 27% of 15-year-old girls in England and Wales smoke compared with only 18% of boys. Since 1961 the proportion of men of all ages who smoke has fallen by more than half, to 33%; the proportion of women who smoke (30%) is now almost the same, except in Scotland where more women than men smoke. It is in the younger age groups that the changes have been greatest; 28% of women aged 16–19 years and 37% of those aged 20–24 years now smoke (*1*).

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Table 8. Prevalence (%) of smoking among 15-year-olds in ten developed countries, 1986

Country		Smoke daily	Smoke weekly	Smoke less than weekly	Do not smoke (have tried)	Have never smoked	No. of subjects
All countries	Boys	15.0	4.4	6.5	39.9	34.2	5754
	Girls	13.8	5.6	8.0	36.2	36.3	5934
Austria	Boys	11.8	6.5	10.3	43.3	28.2	476
	Girls	13.1	7.1	11.8	39.1	28.9	381
Belgium	Boys	16.6	5.0	5.1	32.7	40.6	603
	Girls	13.5	6.2	5.6	29.4	45.3	502
Finland	Boys	29.1	6.3	6.3	39.9	18.4	539
	Girls	20.1	7.4	10.1	36.8	25.6	543
Hungary	Boys	20.4	5.9	8.2	39.9	25.4	562
	Girls	14.1	6.8	8.2	42.2	28.7	704
Israel	Boys	5.7	3.5	3.5	30.9	56.4	402
	Girls	4.1	3.4	6.3	21.3	64.9	559
Norway	Boys	16.2	4.1	9.1	43.2	27.4	627
	Girls	17.6	6.3	14.4	35.6	26.1	568
Scotland	Boys	14.7	2.6	3.6	39.8	39.2	771
	Girls	15.6	4.5	6.7	40.0	33.3	711
Sweden	Boys	8.7	5.7	7.6	47.0	31.1	541
	Girls	10.9	5.6	7.1	37.6	38.8	521
Switzerland	Boys	9.5	3.6	10.2	35.8	40.9	279
	Girls	10.5	4.4	11.3	29.3	44.4	341
Wales	Boys	13.1	2.4	4.4	41.9	38.2	954
	Girls	15.1	5.2	4.4	41.2	34.1	1104

Source: WHO Cross-National Study on Children's Health Behaviour.

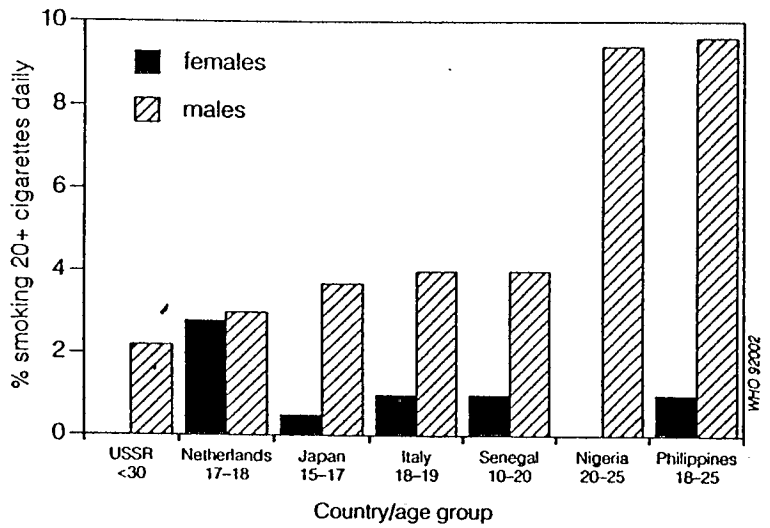
It is difficult to make a more detailed comparison because of the differences in age groups surveyed and in dates of surveys. What is clear, however, is that the situation is changing rapidly and regular studies should be undertaken and publicized as such information has important implications for policies relating to tobacco control.

- In the United Kingdom, 15% of smokers aged 11 years smoked more than 26 cigarettes a week, compared with 58% of those aged 15 years; however, young men are more likely to be heavy smokers than are young women (*1*).

The use of *smokeless tobacco* (chewing tobacco and snuff) is currently rare among girls and women in developed countries. Its use by young men is relatively widespread in some developed countries, such as Sweden and the United States and the challenge

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Fig. 2. Heavy smoking among young people



Source : Various, around 1985

is to ensure that these forms of tobacco use are not taken up by girls.

- In Sweden the per capita smokeless tobacco consumption fell by about 75% between 1920 and 1976, but then it began to increase due to the marketing of new products (moist snuff), reflecting a marked shift in the age distribution of users. According to data obtained in 1986, moist snuff is mainly used by young people, especially young men, and has become more popular than chewing tobacco or nasal snuff. Use of these products by women remains very low (*13*).
- In Canada the overall usage rate for moist snuff among young people in the national population is less than 1%, but use in certain occupational, ethnic or regional groups may be many times higher than the national rate. For example, 17% of Indian girls and 20% of Indian boys aged 10–14 years use snuff (*14*). Snuff is less expensive than cigarettes, and appeals to children and younger teenagers, but is often replaced by cigarettes by older adolescents.

Groups at high risk

In countries where smoking has declined among women, it has become increasingly associated with economic and social disadvantages. Although smoking was first adopted by the more affluent educated women, these women were also the first to give it up. The female smoker is now more likely to have a limited education; have a lower status job or be unemployed (see Table 9); be

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on a low income; be single, separated or divorced; or be subject to other forms of deprivation.

- In Sweden 53% of single mothers smoke compared with 26% of all adult women (*15*).
- Evidence from the United States shows that the narrowing gap in prevalence rates between men and women is due, in part, to higher rates of uptake of smoking among less educated young women: women without a college education are more than twice as likely to take up smoking as those who go to college (*16*). According to a survey conducted from 1978 to 1980, the highest rates of smoking were among cashiers (44%), machine operators (41%), nurse aides (41%), factory workers (38%), waitresses (38%), and hairdressers (37.5%). The lowest rates were among elementary school teachers (19.8%), secondary school teachers (24.8%), bank tellers (25.7%), registered nurses (27.2%), and child-care workers, excluding those in private households (28.9%).
- Studies in the United Kingdom have shown that the prevalence of smoking among women under 60 years of age is highest among those who are widowed or separated (52% in 1984 against 35% of married women), working in the home (39% against 33% of those working full-time) or unemployed (48%) (*17*). Table 9 shows that while smoking prevalence has decreased in all occupational groups, the figures remain higher among manual workers than other groups.
- A survey in New Zealand showed that female smokers were more likely to be in manual or unskilled occupations, have family problems or depressive symptoms and make excessive use of other dependence-producing substances. The highest proportion of smokers in the population was among the unemployed (52% for women in 1984) and those who received social security benefits (*12*).
- In Canada, smoking is also affected by class and occupational factors. People of lower and manual or unskilled classes are more likely to smoke than those belonging to the middle and upper classes. About 25% of female teenagers use tobacco every day, and almost 40% of women in their early twenties; prevalence rates are slightly higher than for teenage boys and young men. While 28% of employed women smoke, the rate rises to 40% for the unemployed. More smokers (women and

Table 9. Prevalence of smoking among women by socioeconomic group in the United Kingdom, 1973–86

Year	Percentage of women smokers					
	Professional	Employers and managers	Clerical and administrative workers	Skilled manual workers	Semi-skilled manual workers	Unskilled manual workers
1973	33	38	38	47	42	42
1976	28	35	36	42	41	38
1980	21	33	34	43	39	41
1984	15	29	28	37	37	36
1986	19	27	27	36	35	33

Source: reference *17*.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

men) are found in clerical and service occupations than in the other sectors (*18*).

- In Australia also, smoking rates are higher among the unemployed, and manual or unskilled workers than among clerical or administrative workers, for both women and men (*6*).

It has also been found that ethnicity and race may lead to social and economic disadvantages, which in turn have been associated with higher smoking rates among women.

- In New Zealand, Maori women and men smoke more than the white women and men; they are also among the poorest people in New Zealand and have one of the world's highest smoking rates for women. In Canada, a study on Indians in north-western Ontario showed that over half of the population smoked; among the women aged 15–24 years, almost 70% were smokers.
- In the Northwest Territories, the prevalence of smoking among Inuit girls was 61%; among Inuit adults the figure was 93%, and was higher in women than men (*12*). However, in the United Kingdom, white women smoke more than black women, while Asian women smoke very little (*10*).

Developing countries

On a world scale, tobacco consumption is increasing by 2.1% per annum. In developing countries tobacco consumption is increasing by about 3.4% per annum, while in developed countries it is decreasing by 0.2% per annum. Because of technological changes in the manufacture of cigarette tobacco, the changes in the number of cigarettes smoked are far greater than these percentages would indicate. In many developing countries, although sufficient information on trends and socioeconomic factors related to smoking among women may not always be available, it has been estimated that 2–10% of women smoke; in general, the prevalence of smoking among women in these countries remains low compared with that among men or with that among women in developed countries. There is an indication that in some developing countries, smoking among women is increasing and it is likely, as a result of accelerating international trade in tobacco products and the introduction of new types and flavours of cigarettes, together with the related advertising and marketing, that there will be further increases in the future.

The challenge facing developing countries is to prevent smoking from reaching the scale found in developed countries, particularly because increased tobacco consumption threatens to undo much of the progress made in health development for women. For women in developing countries, with low rates of tobacco use, it may still be possible to avoid a future epidemic and the associated

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social and economic costs of further avoidable premature deaths and ill health caused by tobacco.

Evolution of tobacco use among women

In the majority of developing countries, smoking by women has been considered to be socially unacceptable; in some countries, a woman's smoking might even bring shame upon her father or her partner, thus reducing his social standing. However, there have always been small areas in which these restrictions did not apply and where women's smoking behaviour was similar to that of men, for example in certain areas of India, Nepal, Papua New Guinea, and northern Thailand.

In some regions where women smoke, their smoking behaviour is different from that of men. For example, in certain parts of India the practice of reverse smoking has been more prevalent among women than among men. In sub-Saharan Africa, smoking behaviour can vary between different tribes; thus in Kenya women belonging to the Masai, Samburu, Kisii and Kikuyu tribes are non-smokers but among the Luo tribe, more women than men are smokers. In the Arab world, smoking by women differs from one area to another: in many of the countries, women may smoke hubble-bubble at family gatherings or at all-women social gatherings. In some of the countries, however, they do not admit to smoking at all.

Throughout the developing world, there is often a sharp distinction between the smoking behaviour of the rural populations and that of the urban populations. Those living in the towns and cities have largely abandoned the traditional methods of using tobacco in favour of cigarettes. In some developing countries, cigarette smoking is now an activity of the younger, educated and more affluent women, usually in large cities, while older women in rural areas have retained the traditional ways of using tobacco.

The pattern and level of smoking among women in developing countries are also varied. Although the prevalence and intensity of smoking may be lower, the average tar and nicotine levels of cigarettes sold in developing countries are usually higher than in developed countries. Women's consumption of tobacco will be influenced by the fact that they generally have less access to already scarce financial resources, and are constrained by traditional and cultural factors, as well as social norms and beliefs in many countries.

- A questionnaire survey in Morocco showed a very low rate of smoking (9.8%) among devout Muslims aged 14–65 years, with a minimal rate among women (0.4%) (*4*).

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

The age of starting to smoke is also different from developed countries, and in some developing countries, young women are less likely than young men to be heavy smokers (i.e. smoke 20 or more cigarettes a day). While in many developed countries there is a slower rate of decline of smoking among women and in some cases, more teenage girls than teenage boys smoke, in developing countries rates for young women are usually low.

- In Costa Rica, there is evidence to suggest that women are starting to smoke at younger ages (*19*).
- In rural areas of the Islamic Republic of Iran it is not acceptable for young women to smoke but there is less stigma attached to smoking by older women, such as hubble-bubble smoking.

While smoking by women is often socially unacceptable, tobacco chewing is more widely accepted and the prevalence of chewing is surprisingly high among women in many developing countries. In Kenya, the prevalence of tobacco chewing among the women in the Masai, Samburu and Luo tribes is high at all ages and tobacco is also chewed by the older women in the Kikuyu tribe. Tobacco chewing is also fairly common among women in south-east Asia, where it may be combined with reverse smoking.

Regional patterns

Vast differences in sociocultural behaviour occur between regions and are reflected in the wide variations in patterns of tobacco consumption among women. However, all the patterns and trends point to a forthcoming serious problem.

Africa

It is currently estimated that only about 10% of women in Africa smoke, but rates are increasing, especially in urban areas. In rural areas a limiting factor is cash resources and, away from the towns, fewer women smoke and the intensity of smoking by women is usually lower; however, tobacco chewing is not uncommon. The situation in both rural and urban areas may be changing.

- In 1973, fewer than 3% of Nigerian women students smoked, but by 1982 the figure had reached 24% among female university and polytechnic students, and 52% among female trainee teachers. These students may now be in positions in which they will set an example to the community at large (*20*).

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- In the early 1980s, 0.75–5.9% of women in Ghana smoked (*21*); in Swaziland, the prevalence rates were 3%, 4% and 7% for smokers, occasional smokers and ever smokers,[1] respectively (*22*). Among students in secondary and tertiary education institutions in Zambia, 4% of the women were smokers, but in the general population 7–10% of women were daily smokers (*23*). Among medical and paramedical students in 1983 in the Gondar College of Medical Sciences, Ethiopia, 3% of women were smokers, a rate similar to that found among the women in a Nigerian nursing school (8%) (*24*, *25*).

As would be expected, smoking behaviours vary between the different African countries and between the different areas or tribes within those countries. In Zambia, the conventional methods of using tobacco (cigarette, cigar and pipe) are common in urban settings, but traditional methods (snuff and mishanga) remain popular in the rural areas. Such patterns probably exist in most of the African countries and it is also likely that, within many of the countries, there will be tribal differences similar to those found in Kenya (see p. 21).

In only a few of the African countries have there been any surveys of smoking in the general population; the few surveys reported tend to have been carried out on specific groups such as students. These can, however, be useful in forecasting future trends. The level of development, the degree of urbanization and the extent of penetration of life-styles which the young feel a need to emulate if they are to be considered sophisticated or successful, are all factors that are leading to an increase in the adoption of smoking in many African countries, particularly among educated and affluent women.

The information on incidence and mortality from smoking-related diseases is also limited; however, it suggests that the level of smoking by women is not insignificant and is increasing.

- In Mauritius, the number of deaths from three smoking-related cancers (cancers of the lung, larynx and oral cavity), calculated as a percentage of total cancer deaths, has increased over the period 1969–86: from 6% to 10% for women and from 19% to 29% for men. The standardized lung cancer death rates at ages 35–69 in 1960–64 were 20.6 per 100 000 for men and 2.8 per 100 000 for women. By 1985, these had increased to 37.3 per 100 000 for men and 9.0 per 100 000 for women. A male:female ratio of 7:1 in 1960 and 4:1 in 1985, suggests that women are increasingly taking up smoking. By 1987 the ratio had become 3.5:1 (*26*).

[1] Defined as people who have smoked at any time, including in the past.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Latin America

Information about the prevalence of smoking has not been systematically available for most countries in Latin America and the Caribbean.

In 1971, the Pan American Health Organization (PAHO) conducted a survey in 8 cities in Latin America to determine age-adjusted smoking prevalence rates for adult women and men. The prevalence of smoking among women ranged from 7% to 26% (compared with 30% among women in the United States), being higher among women in countries of the southern cone and the Andean subregion, than among those in Central America, Mexico and Peru. In all cities, women began to smoke at older ages and had a lower prevalence rate than men, although the difference was less marked in cities with higher levels of tobacco consumption. In most cities, the age-adjusted prevalence of cigarette smoking among women increased with higher levels of educational attainment.

Almost 150 surveys of smoking behaviour have been conducted in the past 20 years in Latin America and the Caribbean. Unfortunately, these surveys differ considerably in their sampling methods, target populations, definitions, weighting procedures and reporting formats, thus comparisons are difficult and should be interpreted with caution.

Overall, the results of the recent surveys show wide variations in the prevalence of smoking among women in Latin America, from 3% in La Paz, Bolivia, to 49% in Buenos Aires, Argentina.

The prevalence rates among women are usually lower than those among men, and are generally between 10% and 39%. Most reports of recent surveys indicate that the prevalence among women is increasing. In general, prevalence rates are lower in the less developed, predominantly rural areas and higher in countries that have undergone modernization, such as Argentina, Brazil, Chile and Uruguay, where almost as many women as men smoke.

Prevalence appears to be higher among young men than among young women and higher in the urban areas of the more developed countries of the region. Smoking among young people appears to be more common in the non-Latin Caribbean than in Central America, Mexico, and the Latin Caribbean. The prevalence of smoking among adolescents is high in some areas, and may even exceed that among adults. Almost half of the surveys reported a prevalence of greater than 30% for young men, and almost one-third reported a prevalence of greater than 30% for young women.

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Surveys of women of childbearing age have been conducted in some countries in Latin America. The prevalence of smoking varies considerably: one-quarter of the surveys reported a prevalence of more than 30%, and more than half reported a prevalence of greater than 20%.

Although many social and demographic changes have occurred in Latin America and the Caribbean over the past two decades, four main factors may have contributed to the increase in prevalence of cigarette smoking in the region, namely:

— aging of the population;
— increasing urbanization;
— greater access to education;
— entry of women into lucrative employment.

- Thus in Costa Rica, 24% of the affluent urban women are smokers compared with only 10% of the poorer rural women (*19*). There is a trend towards smoking by younger age groups and this was also seen in Chile where, among high school students (mean age 16 years) in Santiago, 57% of boys and 59% of girls were smokers, 85% of them smoking up to 40 cigarettes per week (*3*).

South-east Asia

Cigarette consumption by women in south-east Asia appears to be very low. It is more or less static overall, measured on a per capita basis: there may have been a slight increase in smoking prevalence in one country (Thailand) and a small decrease in another (India), but overall the change is limited. However, in most south-east Asian countries, cigarettes represent only a small part of tobacco use. Thus, in assessing the health effects of tobacco, other forms of tobacco use should be taken into account, such as smoking the kretek, bidi, chutta, dhumti, khi yo, ya muan, chilum and the water pipe, and the widespread practice of tobacco chewing: gazare, khaini, naswar, zarda, and pan masala.

When every type of tobacco use is taken into account, the per capita consumption patterns look very different, showing a much higher level than is seen when cigarettes only are considered. While smoking, particularly cigarette smoking, is predominantly practised by men, chewing is very common among women. In some areas of south-east Asia, such as in some parts of rural India and in Nepal, women smoke bidis and chutta, often in reverse smoking. Similarly, pan chewing and the use of mishri (masheri) are very common in many areas of the Indian subcontinent, being used by as many as 38–59% of women, and in Andhra Pradesh, reverse smoking of chutta is considered more "feminine" than the non-reversed chutta smoked by men.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

- In Nepal, approximately 60% of the women smoke bidis (*10*). A study in two hill villages in Nepal (1983–84) showed that 62.4% of females smoked every day. A previous study of the rural area around Kathmandu (1980) had found that 60.6% of females smoked daily (*3*).
- In Bangladesh, smoking by women is limited by poverty, customs and beliefs, although bidi smoking is common among poor rural women (*10*).
- In Indonesia, the main form of smoking is the kretek. Although smoking by women is not common, it has increased from 3.1% in 1980 to 3.9% in 1986; among primary school girls, 10% were recorded as being smokers (*27*).
- In India, the prevalence of smoking among female students was 2–5% in the early 1980s. No figures are available for the urban population, but it is estimated that no more than 5% of women are smokers. There are a number of well-defined areas in India where men, women and children all use tobacco. In Kerala, women chew tobacco; in Bihar, they smoke bidis, cheroots and hookah; in Goa, dhumti; in Maharashtra, Gujarat and Bihar, kaini, or something similar; and in Andhra, chutta in reverse smoking. In areas where women smoke there is usually an equal number of male and female smokers (*28*).

Eastern Mediterranean

The prevalence of smoking among women in the Region is affected by cultural issues, and smoking is still considered to be vulgar, improper and immoral.

- Several surveys have been conducted in Egypt, which showed that the prevalence of smoking among women and men was 0.9% and 39.8% respectively in 1978–79 and 1.5% and 32.5% in 1979–81 (*29*). In 1986, the prevalence rates were 1.0% and 39.8% and in a smaller-scale survey in 1988, the rates were 2.3% and 30.7% respectively (*30*).
- In Morocco a recent survey has shown that in secondary schools, only 8.6% of female students are smokers compared with 33% of male students. These rates are slightly increased at university level, with 10.9% of young women and 44.3% of young men smoking; the average rate (in urban areas) is 14.9% for women and 58.2% for men. Furthermore, a survey of adults working in towns (Table 10) has show that the prevalence rate is highest among women who are doctors or other professionals (*4*).

Table 10. Prevalence of smoking among adults working in towns in Morocco

Profession	Prevalence (%)		
	Men	Women	Average
Various professions	58.2	14.9	52.1
Medical doctors	53.0	25.6	50.0
Paramedical personnel	57.6	9.3	30.0

Source: reference *4*.

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In the Gulf region, a recent survey has shown that about 8% of women and 33% of men are smokers. It was also found that smoking prevalence was high among professional and expatriate women.

Western Pacific

Throughout the Region there are wide variations in smoking behaviour, which relate to ethnic origins, geographical areas, urban/rural differences, and the degree to which western life-styles have penetrated the cultures. The prevalence of smoking among women in the Region appears to be less than 10%, except in certain rural areas of Papua New Guinea, where the prevalence is 80%. However, the overall prevalence among women is increasing because of the increasing number of schoolgirls who are taking up smoking.

- A survey of schoolchildren in Manila, Philippines in 1984 (*31*) found that 19% of the girls were smokers; thus smoking among women in Manila could now be at this level. Similarly, a survey of schoolchildren in Tahiti in 1979 found that the prevalence of smoking was slightly higher among girls (22%) than among boys, and this pattern could now be reflected in the adult population of the area (*32*).
- In many of the small Pacific island communities, the prevalence of smoking among women showed marked variations, but was seldom less than 20% (*5*).
- The largest country of the Region, China, could be expected to display a wide range of patterns. A survey of schoolchildren in "key" schools and in ordinary schools was reported in 1982. (Key schools are schools with the best student grades, best teachers and highest rate of students proceeding to higher education). In the ordinary schools, smoking by girls ranged from 0.4% at 12–13 years to 1.1% at 16–17 years. In the key schools, the rate was zero throughout. A household survey in Shanghai County, published in 1982, reported an overall prevalence of 2.6% among women aged 15–70 years, with the highest rate (11.6%) in the age range 60–69 years. In this survey, only 44% of men were smokers, which contrasts with the rate of 95% reported for a rural area near Guangzhou; however, there was no indication whether the female smoking prevalence was also higher in this area. Information received recently by WHO (1991) from the National Patriotic Health Campaign Committee gives the results of a 1984 survey of the population over 15 years of age. Smoking prevalence for men was given as 60% and for women the figure was 7%. The prevalence among women increased with increasing age and was higher among "workers" than among those in professional occupations (*2*).
- A recent survey in Hong Kong found that the prevalence of smoking among both children and adults was higher in industrialized and densely populated urban areas than more residential areas. Among grade 3 and 4 children (8–11 year olds) 10.2% of boys had tried smoking compared with 5.7% of girls (*33*).

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

- Anti-smoking activities have been in evidence in Singapore since the 1970s and they appear to have had some success. A survey in a low-income community with a demographic structure reflecting that of the Singapore population as a whole, carried out in 1978, showed that the prevalence of smoking was 6.3% among women and 44.3% among men. In 1984, the rates had fallen to 34.9% among men and 3.4% among women, and by 1988 were lower still at 24.6% among men and 2.4% among women. Although smoking is now declining in Singapore, the high levels of the early 1980s are still having their effect in an increasing lung cancer rate for both men and women. It is interesting to note that the smoking prevalence rates in different ethnic groups in 1978 (Chinese 45%, Malay 13% and Indian 6%) are reflected in the age-standardized lung cancer rates per 100 000: for men, Chinese 64.4, Malay 21.3, and Indian 13.1; and for women, Chinese 18.9, Malay 6.7, and Indian 7.4 (*4*).

Monitoring the epidemic

The global and regional smoking patterns presented above show that urgent action to control the smoking epidemic is needed in developing as well as developed countries.

The prevalence of tobacco smoking among women is well documented in most developed countries, as are the history and trends of smoking among women. Data on tobacco consumption and consequent ill health are comparatively rare in developing countries and more information on prevalence patterns and trends would greatly enhance the efficacy of any intervention.

Data produced by various countries are difficult to compare, and will remain so for some time as the tools for the collection of the information have not yet been standardized. In the special case of surveys on tobacco consumption by women, as already mentioned, care must be taken to ensure that prevalence data are not distorted by cultural norms or the acceptability of smoking by women in certain societies.

Confronted with the lack of information, and the diversity of the available data, and in response to a request by the World Health Assembly to monitor and report regularly on the progress and effectiveness of Member States' tobacco control programmes, WHO designed and circulated a summary country profile on the subject. This profile addresses tobacco consumption and prevalence, together with tobacco-related mortality and morbidity and other issues essential for the development and evaluation of tobacco control programmes. Section 1 of this profile outlines the "ideal" information on tobacco consumption, prevalence and intensity that should be collected at intervals of one or two years if possible. The profile, which is reproduced in Annex 1, can be used

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as a basis for collecting information on tobacco use by women and monitoring its effects.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

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Chapter 3

Tobacco or health[1]

Tobacco is a unique consumer product because of the number of deaths and diseases to which it is directly linked as a causal factor. The effects of tobacco consumption have been extensively documented for developed countries and to a lesser extent for developing countries. It is now clear that smoking-related diseases have become "equal opportunity" diseases, affecting women and men in similar ways, if they have similar exposure to tobacco and smoking behaviour. Furthermore, women have additional specific risks related to reproduction. Smoking also contributes to poverty and malnutrition.

Constituents of tobacco

The different ways in which tobacco is used have been examined in Chapter 2. The biological and health effects of tobacco consumption, including dependence, are caused by its various constituents.

Constituents of tobacco smoke

When a cigarette is smoked, a large number of chemical compounds are formed at the burning end, which are either inhaled through the cigarette as mainstream smoke, or are emitted into the air as sidestream smoke.

[1] Information and data presented in this chapter are based on many published studies (see references on pp. 103–106), and on unpublished evidence available to the International Agency for Research on Cancer and the World Health Organization.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Tobacco smoke is an aerosol, consisting of a particulate phase, composed of liquid droplets, dispersed in a gas/vapour phase. It contains a large variety of compounds, some 4000 of which have been identified and many have been quantified. Many of the major classes of organic chemical compounds are represented; these compounds could also be classed by their effects on the body tissues, as chemical asphyxiants, irritants, ciliastatic compounds, carcinogens, cocarcinogens or pharmacologically active compounds; some have several effects.

The aerosol particles in mainstream smoke vary in size from 0.15 μm to 1.3 μm, with a mean value of 0.4 μm. In sidestream smoke the particles are smaller, varying from 0.01 μm to 0.1 μm. Thus, the particles, the vapour phase constituents and the permanent gases can all reach the alveoli when inhaled and, indeed, it has been shown that smoke reaches every part of the trachea, bronchi and lungs and smoke constituents have been found to have been phagocytosed by alveolar macrophages.

Cancers of the trachea, bronchus and lung are caused by the deposition of carcinogens in these tissues. Some carcinogens are absorbed by the lungs and transported to other parts of the body, where they initiate cancer in other tissues.

Various diseases, grouped under the collective title of chronic obstructive pulmonary disease (COPD), arise from the smoke constituents which cause ciliastasis, produce hypersecretion and changes in the chemical structure and physical nature of mucus, irritate the bronchi and bronchioles, and cause inflammation of the membranous bronchioles.

The cardiovascular and cerebrovascular diseases are caused by the many smoke constituents that pass through the lungs and dissolve in the blood, affecting the haemoglobin, platelets, vascular tissues and heart rate.

Constituents of smokeless tobacco

At least 2500 chemical constituents of unburnt tobacco have been identified. These include, in addition to compounds derived from the tobacco itself, many substances that are added to the tobacco during cultivation, harvesting and processing. Many of the major classes of organic chemical compounds are represented and among these are many with biological activity detrimental to health, such as irritants, carcinogens and psychoactive substances, the principal representative of the latter being nicotine.

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Nicotine dependence[1]

Nicotine, an alkaloid, is a constituent of all tobacco products and is fundamentally the reason why people use tobacco: nicotine-free tobacco does not satisfy the needs of those who are dependent on tobacco.

Alkaloids are a group of chemical compounds of plant origin, many of which have long been used by people for their medicinal properties, their psychoactive effects and as poisons. Most alkaloids are poisonous at high concentrations and nicotine is no exception; at high exposure levels it is a potent and lethal poison.

Alkaloids are by definition alkali-like and nicotine can exist as the free base or as a salt. When tobacco is combined with lime for chewing, as in south-east Asia, the nicotine is released from the tobacco as the free base, and absorbed in the mouth. Smoke from pipes and cigars also contains nicotine as the free base which is absorbed in the mouth and nose. The smoke from other nicotine-delivery devices, particularly cigarettes, is acidic; in this case, the nicotine is absorbed in the lungs.

The absorption of nicotine by the blood is very rapid; nicotine is quickly distributed to the brain and its effects on the central nervous system are manifested almost instantaneously.

Studies in both humans and animals have shown that nicotine is a potent psychoactive drug. High doses can lead to intoxication and death; at doses typically obtained from tobacco products, nicotine is responsible for much of the pleasure and satisfaction obtained by tobacco users. Through activation of nicotine receptors in the central nervous system, nicotine can produce dependence. It also appears that nicotine can alleviate various dysphoric states associated with boredom, stress, and the nicotine withdrawal syndrome.

Nicotine administration can lead to tolerance and physiological dependence. Tolerance is indicated by the diminished response to repeated doses of nicotine. Nicotine-induced physiological dependence and withdrawal are specific to the administration or removal of nicotine itself. The withdrawal syndrome includes a craving for nicotine, impaired ability to concentrate, disrupted cognitive performance, mood changes, and impaired brain function. The severity of the symptoms may be such that heavy smokers are unable to abstain permanently from tobacco without treatment; however, the symptoms usually disappear within a few weeks.

[1] This section is based on information received from Dr J. Henningfield, Chief, Clinical Pharmacology Branch, National Institute on Drug Abuse, Addiction Research Center, Baltimore, MD, USA.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Nicotine dependence, like other forms of drug dependence, is a progressive, chronic, relapsing disorder. The severity of the disorder varies from low levels to levels at which the behaviour is highly resistant to change.

Mortality and morbidity

In 1980 the report of the US Surgeon-General on *The health consequences of smoking for women* (*34*) exposed clearly the fallacy of the belief that women were immune to tobacco-related diseases. This impression was gained from studies conducted between 1950 and 1980, which compared the death rates from tobacco-related diseases among men with those among women. More recent research has shown that whenever the cigarette smoking characteristics — in particular duration and intensity — of women emulate those of men, their relative risks of smoking-related illness are likely to be similar.

Currently, tobacco use is estimated to account for 3 million deaths per year. More than half of these occur in developed countries, and more than 300 000 of them are among women in these countries. The cumulative exposure of women to tobacco (primarily from smoking) has been much higher in these countries than in the developing countries and as a consequence the death rates from smoking-related diseases among women in developing countries are likely still to be relatively low. However, the mortality rates from other forms of tobacco use among women (primarily chewing) is substantially higher in developing countries, with annual estimates of at least 100 000 deaths in India alone. Current trends suggest that among women who smoke, at least 25% will die from smoking-related diseases.

In Chapter 2, it was pointed out that the uptake and increase in tobacco consumption by women is mainly in the form of smoking, particularly cigarette smoking; consequently this chapter will concentrate on this issue. However, in some developing countries such as India, cigarette smoking represents only a small fraction of the total tobacco consumption, in particular among women in rural areas. In these countries, smokeless tobacco is also imposing its burden of tobacco-related diseases and deaths. The risks of oral cancer, as well as of numerous odontological disorders and diseases of the mouth and gums, are greatly increased by the use of smokeless tobacco. Smokeless tobacco use has also been shown to be related to hypertension and an increased heart rate. In addition, tobacco chewing poses specific risks for women, e.g. for potential adverse effects on the fetus during pregnancy.

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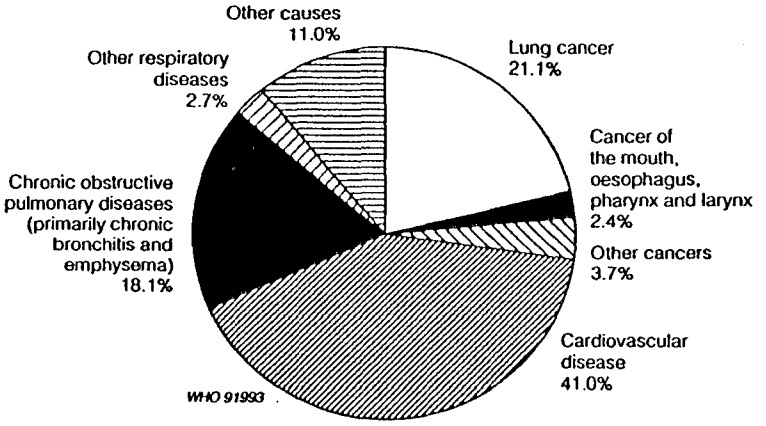
Fig. 3. Estimated distribution of deaths from various smoking-related diseases among women in developed countries, 1985



Total 300 000 deaths

In countries where smoking is a long-established custom, about 90% of lung cancer cases, 30% of all cancers, and over 80% of cases of chronic bronchitis and emphysema are attributable to tobacco use, as are some 20–25% of deaths from coronary heart disease and stroke. In countries where smokeless tobacco use has been predominant, such as in the Indian subcontinent, it is a major cause of oral cancer.

An overview of the principal causes of smoking-related deaths among women in the developed countries for which reliable mortality statistics are available is given in Fig. 3. Of the 300 000 deaths attributable to smoking among women in these countries in 1985, 21.1% were coded to lung cancer, 41% to cardiovascular diseases, primarily coronary heart disease and stroke, and 18.1% to chronic obstructive pulmonary disease. The proportionate distribution was similar for men.

In 1980 the US Surgeon-General made the following comments about women smokers in the United States, which can also be expected to apply in other countries: "Women demonstrate the same dose-response relationships with cigarette smoking as men. An increase in mortality occurs with an increase in the number of cigarettes smoked per day, an earlier age of beginning cigarette smoking, a longer duration of smoking, inhalation of cigarette

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

smoke, and a higher tar and nicotine content of the cigarette. Women who have smoking characteristics similar to men may experience mortality rates similar to men" (*34*).

- A recent study which examined the life expectancies of cigarette smokers and non-smokers in the United States found that women and men who are heavy smokers at 25 years of age can expect at least a 25% shorter life than non-smokers (*35*).

A summary of the relative risks[1] for smokers in the United States for various causes of death is given in Table 11. In addition to the gender differences, Table 11 demonstrates how the risks for women multiplied over the two decades between the two studies, commensurate with their longer exposure to smoking. This is particularly evident for lung cancer, where the relative risk increased almost fivefold to a level similar to that found for men in the 1960s. A similar pattern is found in most developed countries and is likely to emerge in a growing number of developing countries as exposure to tobacco increases.

Table 11. Summary of estimated relative risks for various causes of death among current cigarette smokers aged 35 years and older, Cancer Prevention Study, 1959–65 (CPS-I) and 1982–86 (CPS-II)

Underlying cause of death	Men		Women	
	CPS-I	CPS-II	CPS-I	CPS-II
Coronary heart disease, age 35	1.83	1.94	1.40	1.78
Coronary heart disease, age 35–64	2.25	2.81	1.81	3.00
Cerebrovascular lesions, age 35	1.37	2.24	1.19	1.84
Cerebrovascular lesions, age 35–64	1.79	3.67	1.92	4.80
Chronic obstructive pulmonary disease	8.81	9.65	5.89	10.47
Cancer of the lips, oral cavity, and pharynx	6.33	27.48	1.96	5.59
Oesophageal cancer	3.62	7.60	1.94	10.25
Pancreatic cancer	2.34	2.14	1.39	2.33
Laryngeal cancer	10.00	10.48	3.81	17.78
Lung cancer	11.35	22.36	2.69	11.94

Source: reference *36*.

[1] Relative risk describes the risk of dying or developing a disease for a person exposed to a particular risk factor (in this case cigarette smoking) compared with someone not exposed.

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Estimates of relative risks are not available for women in developing countries, but current rates of tobacco-related diseases are likely to be generally lower than in developed countries as relatively few women smoked until recently. Since there is a definite time-lag between the onset of smoking and the development of smoking-related diseases, such as lung cancer and heart disease, the number of tobacco-related deaths among women in both developed and developing countries is likely to increase well into the next century.

Tobacco consumption is also an important cause of morbidity, affecting the quality of life of women, either as sufferer or carer for other family members affected by tobacco-related diseases. Ill health arises from numerous tobacco-related conditions, including respiratory distress, gastric ulcers and pregnancy complications. The adverse effects of smoking on pregnancy range from low birth weight to increased incidence of spontaneous abortions, premature births, stillbirths and neonatal deaths. Low birth weight is one of the strongest predictors of infant mortality.

Tobacco smoke is not only dangerous to the smoker but to nearby non-smokers as well. Besides the acute effects of eye and throat irritation due to exposure to the smoke, passive smoking is detrimental to the respiratory tissues and increases the risk of lung cancer and cardiovascular disease in non-smokers. Children are particularly vulnerable to the damaging effects of enforced passive smoking.

Thus, in the case of women it is not enough to consider only the direct effects of tobacco consumption because, in most societies, they are also the primary carers of children and their smoking puts these children directly at risk, as well as providing role models of smoking to children. Parental smoking may also have economic consequences and repercussions on the child's well-being (e.g. fewer resources may be available to purchase food).

Cardiovascular diseases

Among the causes of death related to tobacco use, cardiovascular diseases represent the most important absolute risk. Both nicotine and carbon monoxide are contributory or supportive factors in the development of coronary artery and peripheral vascular disease. In many developed countries, there have been dramatic falls in mortality from these diseases due largely to a reduction in risk factors, including smoking cessation. Further reductions in mortality are possible with further decline in smoking.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Coronary heart disease

Coronary heart disease (CHD), including acute myocardial infarction (heart attack) and chronic ischaemic heart disease, is more common in women who smoke than in those who are non-smokers. Cigarette smoking increases the risk of CHD by approximately twofold, and in younger women it may increase the risk several-fold. Cigarette smoking also acts synergistically with other CHD risk factors, producing a risk greater than the sum of all the individual risks.

Overall, the death rate from CHD among smokers is 80–90% greater than among non-smokers, equivalent to a 2–4-fold greater risk of sudden death. The risk of myocardial infarction is multifactorial. The presence of one or more of the major CHD risk factors, such as cigarette smoking, hypercholesterolaemia, and hypertension puts individuals at high or very high risk. The risk of CHD is also increased among diabetic smokers and among smokers with genetic familial hyperlipidaemias.

Studies in North America, northern Europe and Japan have shown that cigarette smokers are at greater risk than non-smokers for fatal and non-fatal myocardial infarction and for sudden death. Women who smoke and use oral contraceptives are on average about 5–10 times more likely to develop heart disease than those who use the pill and do not smoke. This risk increases with age, and is particularly high among women over 40 years. The estimated risk of myocardial infarction among current smokers also increases with the number of cigarettes smoked daily and does not depend on either the nicotine or carbon monoxide yield of the cigarette. In other words, the risk of CHD is *not* reduced by smoking cigarettes with a lower tar and nicotine yield. This is particularly important for women who may smoke these cigarettes, thinking them to be safer.

However, there is clear evidence that giving up smoking markedly reduces the risk of dying from heart disease or stroke. This decline in risk is evident soon after giving up smoking and continues with time. There is thus considerable scope for further marked declines in mortality and morbidity from CHD among women as smoking cessation programmes become more effective.

Cerebrovascular disease

In populations where women have smoked for several decades, it is estimated that smoking accounts for approximately 55% of deaths from cerebrovascular disease in women under

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65 years. The two major types of cerebrovascular disease (collectively known as "stroke") are: (a) cerebral infarction, and (b) cerebral haemorrhage. Cigarette smoking makes a significant, independent contribution to the risk of stroke, which increases with the number of cigarettes smoked. Use of both the pill and cigarettes synergistically increases the risk of cerebral haemorrhage in women.

Until recently, the relationship between cigarette smoking and the risk of stroke had been unclear. Recent studies have now confirmed that smoking is an important independent risk factor for stroke in both women and men and that the risk decreases on cessation of smoking. The risk of stroke among women smokers is highest among middle-aged women and stroke is therefore responsible for a significant number of premature deaths among women smokers.

Atherosclerosis

While the incidence of peripheral vascular disease is increased among all smokers, the condition is more common in men than in women. There is a significant association between cigarette smoking and atherosclerosis, cigarette smoking being directly related to the extent of atherosclerotic disease involving large and small arteries in the lower extremities. Diabetes mellitus and cigarette smoking are key risk factors for arterial disease of the lower extremities and the cause of many amputations.

Aortic aneurysm

Cigarette smoking has been associated with an increased risk of aortic aneurysm. The mortality rate from abdominal aortic aneurysm among cigarette smokers (male and female) is 2–8 times the rate among non-smokers.

Hypertension

Cigarette smoking has also been associated with low serum levels of high-density lipoprotein and hypertension. Smoking by patients with hypertension is an important disease risk factor; the risk of coronary heart disease and stroke is 50–60% higher in smokers with high blood pressure than in non-smokers with high blood pressure.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Cancer

Each year, it is estimated that about 6.5 million new cases of cancer occur throughout the world, with about half of them occurring in men and half in women. For women, the most common cancers are breast cancer, cervical cancer, colorectal cancer, stomach cancer and lung cancer, in that order. Among men, lung cancer is most common (reflecting their longer and more extensive exposure to tobacco than women), followed by stomach cancer, colorectal cancer, cancer of the mouth and pharynx and prostate cancer.

In developed countries, smoking is estimated to cause about 85 000 cancer deaths a year among women or approximately 8% of all deaths from cancer among women. Among men, over 500 000 cancer deaths a year or just over 40% of all cancer deaths are attributable to smoking. The proportions are undoubtedly lower in developing countries but are increasing.

- In India it is estimated that about one-fifth of all cancers in women are attributable to tobacco use (*37*).
- In south-east Asia, where smokeless forms of tobacco are widely used, cancers of the mouth and pharynx are twice as common as lung cancer in men and are the third most common form of cancer in women.

Lung cancer

Cigarette smoking is considered to be the major cause of lung cancer in populations where smoking has been common for many years. In developed countries, smoking is associated with about two-thirds of lung cancer cases among women; however, in the United Kingdom and United States, where women have been smoking for several decades, it is associated with about 80% of cases. Since the 1960s, there has been a steady and dramatic increase in the number of deaths from lung cancer among women; overall, death rates from lung cancer among women in developed countries increased by almost 200% between 1957 and 1987 (see Fig. 4). Lung cancer death rates in Japan, Norway, Poland, Sweden and the United Kingdom doubled, and in Australia, Denmark and New Zealand increased by 200%. In Canada and the United States, the rates increased by over 300%.

In addition to the number of deaths, the suffering experienced by cancer patients should also be recognized. Unfortunately, for most tobacco-related cancers, particularly lung cancer, the case-fatality rate (death rate among those who have the disease) is very high and survival is usually short, of only a few months' duration.

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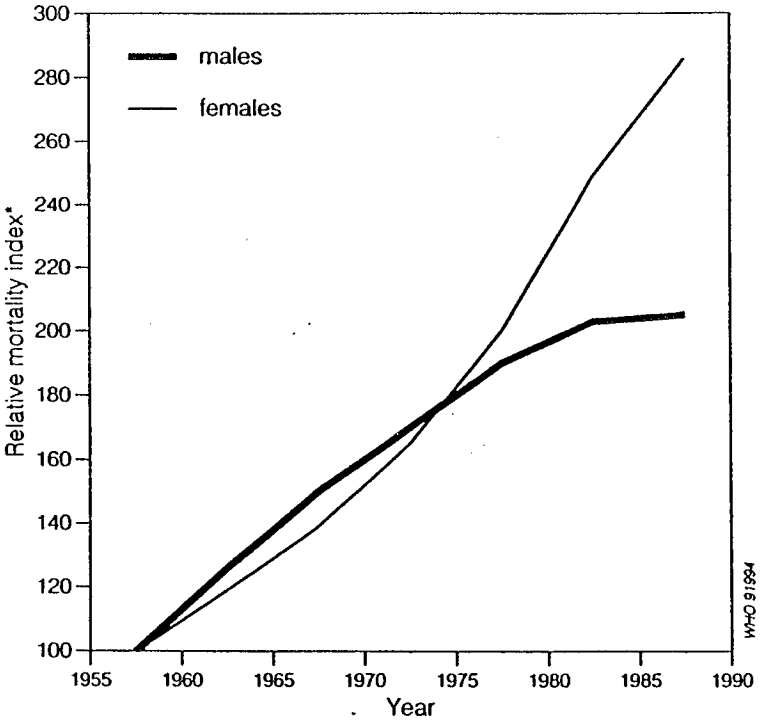
Fig. 4. Trends in lung cancer mortality by sex in developed countries, 1957–87



* Death rate for each period expressed as a percentage of the mortality level for 1955–59.

The risk of lung cancer among women smokers increases with the number of cigarettes smoked per day, duration of smoking behaviour, degree of inhalation, age of starting to smoke, and amount of tar (high, medium or low). In the determination of the risk of lung cancer associated with the quantity of tobacco smoked, two components can be identified: the number of cigarettes smoked per day and the duration of smoking behaviour. While an increase in either factor leads to a higher risk, the effect of the duration of smoking is greater than that of the daily consumption of tobacco.

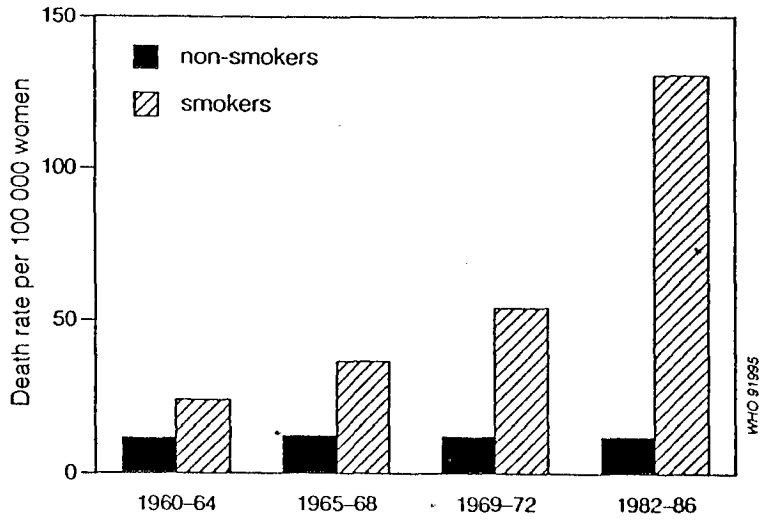
Cigarette smoking is associated with the majority of cases of lung cancer in women and men. In addition, some cases are linked with passive smoking, while others are linked with exposure to other carcinogens, such as radon. There have been reports of an increased risk of lung cancer among coal miners and studies have

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

been conducted to examine the risk for subjects exposed to radon in their homes. Most of the increase in risk occurred among smokers. Living in houses with a high level of exposure to radon will be especially harmful to women smokers, who usually spend more time at home.

Evidence for cigarette smoking being the major cause of lung cancer mortality is provided in Fig. 5, which illustrates the sharp increase in mortality among women smokers in the United States over the period 1960–86, compared with the constant low rate among women who are non-smokers.

Fig. 5. Age-standardized death rates from lung cancer among women in the United States, 1960–86



In Japan, Scotland and the United States, lung cancer now accounts for more deaths among women than breast cancer (Fig. 6). In other parts of the United Kingdom, as well as in Australia and Denmark, lung cancer mortality rates among women are reaching breast cancer mortality rates. In England and Wales, lung cancer mortality rates among women have increased by 250% since the 1970s, and have almost overtaken breast cancer in women aged 65–75 years who started smoking during the Second World War.

The trends in mortality from lung cancer among women in developed countries are shown in Table 12. Only in a few coun-

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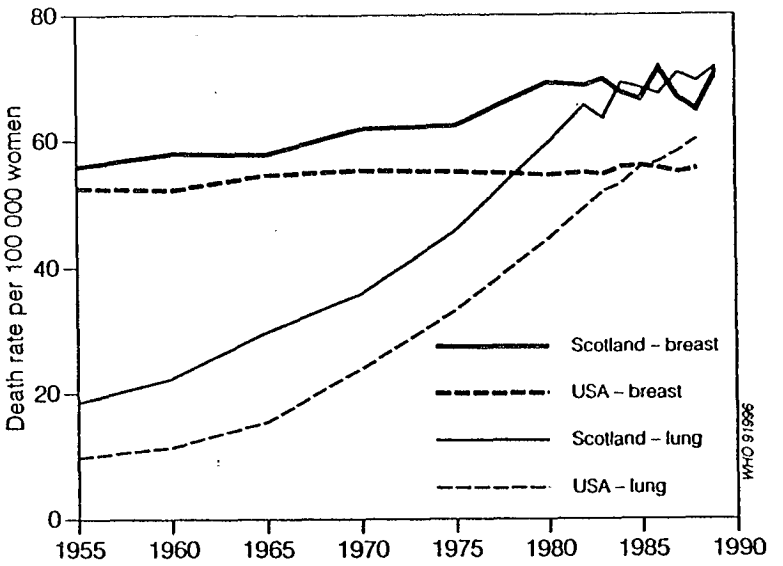
Fig. 6. Trends in age-standardized death rates from lung and breast cancer among women aged 35–74 years, Scotland and the United States, 1955–89



tries (France, Portugal and Spain) are lung cancer death rates still low; however, the rates in these countries will rise sharply in the near future as a result of the very significant proportions of young women who now smoke.

As more and more women die from lung cancer, the levels of mortality from the disease in some countries are rapidly converging towards those in men. As Fig. 7 shows, the male to female ratio of lung cancer death rates in countries such as Australia, Denmark, England and Wales, and the United States declined dramatically from 7–10:1 in the early 1960s to 3:1 in 1985. This trend is expected to continue as the smoking epidemic among men in these countries stabilizes or begins to decline but rates for women continue to rise.

Other cancers

Figures based on studies in the United States of America show that smoking is associated with a very significant proportion of other cancers in women, including cancer of the oral cavity (61%), oesophagus (75%), pancreas (34%), larynx (87%), bladder (37%), and kidney (12%).

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Table 12. Patterns and trends of lung cancer mortality among women in developed countries, 1950–90

Country	Age-standardized[a] mortality rate from lung cancer per 100 000 population					
	1950–54	1960–64	1970–74	1975–79	1980–84	1985–90[b]
Group 1 — Mortality high and rising						
Australia	4.5	5.6	9.7	12.2	15.1	18.6
Canada	4.8	6.0	11.0	15.6	21.5	29.6
Denmark	6.1	8.7	13.7	18.2	25.0	34.4
England & Wales	8.8	12.5	19.2	22.8	26.3	30.1
Hungary	8.1[c]	10.1	12.0	13.1	15.7	20.8
Ireland	6.0	9.2	16.7	20.4	24.7	28.3
New Zealand	4.2	7.1	13.9	16.7	19.9	24.9
United States	5.7	7.4	15.1	20.4	26.9	33.9
Group 2 — Mortqlity intermediate and rising steadily						
Austria	8.8[c]	8.4	9.5	10.2	11.8	12.8
Belgium	5.2[c]	6.1	7.4	8.5	9.4	11.1
Czechoslovakia	7.9[c]	8.1	8.1	9.1	10.2	12.3
Germany	5.6	7.0	7.1	7.9	9.2	11.8
Italy	3.9	5.8	7.1	8.2	9.1	10.8
Japan	1.9	5.8	8.0	9.5	11.2	12.6
Netherlands	4.7	5.1	5.9	7.3	10.1	14.9
Norway	3.7	3.9	5.6	6.9	9.5	14.6
Sweden	5.4	5.6	7.9	9.3	11.3	14.2
Switzerland	4.6	4.5	5.7	6.6	8.4	10.2
Group 3 — Mortality low and rising slowly						
Finland	6.1	5.4	6.1	7.5	8.6	9.4
France	4.5	5.2	5.1	5.3	5.9	7.5
Portugal	3.1[c]	3.4	4.6	4.6	5.4	6.0
Group 4 — Mortality still on plateau						
Spain	3.4	5.2	5.9	5.8	5.6	5.5

[a] The "European" population age structure was used as the standard.
[b] Latest available year.
[c] Data refer to 1955–59.

Source: Lopez AD. Changes in tobacco consumption and lung cancer risk; evidence from national statistics. In: Hakama MM et al., ed. *Evaluating effectiveness of primary prevention of cancer.* Lyon, International Agency for Research on Cancer, 1990, pp. 53–76 (IARC Scientific Publications, No. 103).

Laryngeal cancer has recently become more common in women. Smokers are at higher risk of the disease, thus with the increased prevalence of smoking among women, an increase in the incidence of laryngeal cancer could be expected. Such a tendency may be present in a few countries, but is difficult to assess accurately because of the still low rate of the disease in women. However, the male to female ratio of laryngeal cancer death rates, which in most parts of the world is of the order of 10–20:1, is

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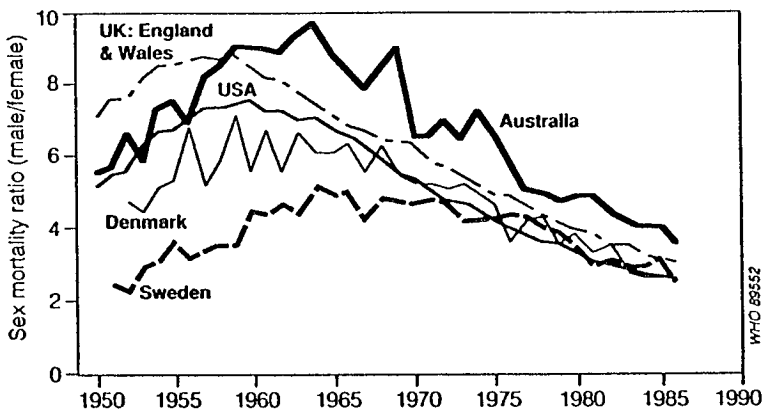
Fig. 7. Trends in male/female mortality ratio from lung cancer in selected countries, 1950–86



much lower (5–6:1) in countries such as Canada and the United Kingdom, where women smoked heavily in the past.

Oral cancers include cancers of the lips, tongue, gums, buccal mucosa, hard and soft palate, salivary glands, floor of the mouth and oropharynx. Oral cancer is a major problem in certain developing countries, particularly in south-east Asia, where a variety of traditional tobacco uses (e.g. chewing or smoking with the burning end of the chutta inside the mouth) are associated with 85–90% of cases among women. Cigarette, pipe and cigar smoking have all been linked to an increased risk of oral cancer. Heavy use of alcohol has been identified as an independent risk factor. The use of both tobacco and alcohol combined with poor oral hygiene or inadequate dentition also increases the risk of developing oral cancer.

Use of smokeless tobacco products (snuff and various forms of chewing tobacco) has been associated with cancers of the gingiva, mouth, lips, tongue, pharynx, larynx and oesophagus. Inhalation of snuff has also been linked to the occurrence of nasal cancer.

The highest reported incidence rate in the world for cancer of the mouth is among women in Bangalore, India, where women have considerably higher rates than men; this pattern is also found in Madras. In contrast, the incidence of lung cancer among women in these cities is extremely low. Again, this shows that when assessing the global effects of tobacco consumption, it is not sufficient to consider only cigarette consumption and lung cancer.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

The risk of oesophageal cancer increases with the use of tobacco and alcohol. Mortality rates from the disease among pipe and cigar smokers are similar to rates among cigarette smokers.

Cigarette smoking is a risk factor for both *urinary bladder* and *kidney cancer*. Smoking compounds the risks of certain tropical diseases: the risk of bladder cancer, for example, is greater among people suffering from schistosomiasis, and β-naphthylamine contained in tobacco tar is a bladder carcinogen (*38*). Smoking also enhances the risk of bladder cancer associated with certain occupational exposures.

Cigarette smoking is closely linked to the occurrence of *pancreatic cancer*, with the risk increasing with an increase in cigarette consumption.

- Studies have shown that the mortality ratio for pancreatic cancer was 1.94 for Japanese women smokers in comparison with non-smokers, and 2–3 for women smokers in Sweden and the United States (*34, 39*).
- Studies in Japan and Sweden have shown that women who smoke are 1.6–2.7 times more likely to develop bladder cancer than those who do not smoke (*34*).

Significantly, for women, cigarette smoking has been associated with a twofold increase in the risk of *cervical cancer*. This may in part be due to confounding with other risk factors since this form of cancer is also strongly linked with certain types of sexual behaviour which might be more prevalent among smokers than non-smokers. Young women who start smoking at an early age, for example, may also become sexually active at an earlier age than those who do not smoke.

A number of studies have shown a slightly lower risk of *endometrial cancer* among women smokers. This may be due to the anti-estrogenic effect of tobacco. However, the prevalence of this type of cancer is very low and the reduction in risk is negligible compared with the greatly increased risk of other cancers associated with smoking.

Bronchopulmonary diseases

There are several bronchopulmonary disease conditions that are classified under the heading chronic obstructive pulmonary disease (COPD). Undoubtedly, smoking is the most important risk factor for COPD in developed countries, although atmospheric pollution in cities and indoor pollution from fires in houses without chimneys are major contributory factors for women in developing countries. Industrial dust and fumes in the workplace have also been implicated, but to a much lesser extent. COPD may

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be defined as a condition characterized by the development of airways obstruction and the presence of chronic bronchitis, bronchiolitis, emphysema or asthma. Emphysema, a major component of COPD, is an abnormal permanent enlargement of the air spaces distal to the terminal bronchioles, either from dilatation or from obstruction of their walls. Most people who die from COPD have emphysema.

- In the United States, COPD morbidity has significantly increased in women, while it has remained almost constant in men. The trends in the prevalence of COPD — stable or downwards for men since 1980, and upwards for women — are consistent with changes in cigarette smoking among these groups (*37*).

Several studies have shown that respiratory conditions, such as cough, sputum, wheezing and dyspnoea (shortness of breath) are more common among smokers than among non-smokers. There is also a higher frequency of pulmonary functional abnormalities among smokers.

The prevalence of chronic bronchitis among smokers increases with the number of cigarettes smoked per day. A close relationship has been demonstrated between cigarette smoking and chronic cough or sputum production in women; these symptoms also increase with the number of packs smoked over the years.

In developed countries, COPD mortality is highest in the eastern European countries, England and Wales, Ireland, and Scotland, and is lowest in southern Europe, Israel and Japan. However, differences are difficult to quantify because of differences between countries in diagnostic and coding practices. In the past, the trend in COPD mortality has been upwards. In recent years there have been substantial declines in death rates in most countries for the major causes of death, but not for COPD or lung cancer.

- In the United States, COPD is one of the few leading causes of death that has shown a steady increase since 1950. The trend for COPD mortality has been similar to that for lung cancer. More than 95% of COPD deaths occur in people over the age of 55. Men have appreciably higher death rates than women; however, the rate of increase has been much more rapid among women than men since 1979. Whereas men showed a 16% increase in mortality, women have experienced a 73% increase (*40*). It has been estimated that the smoking-attributable proportions of mortality from COPD in the USA are 84% for men and 79% for women (*41*).

In European countries, COPD mortality in women over 55 years is increasing. In England and Wales, the increase is about 8–9% per year; trends are also upwards for women in France, the Netherlands, and Scotland.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

- In a Swedish study, the death rate from bronchitis, emphysema and asthma among female smokers was 2.2 times that among non-smokers; this ratio is similar to that reported for the United States (*39*).

In developing countries few reliable data are available and it is difficult to give a precise picture of the situation. In some countries, such as China and Nepal, the combination of smoking and passive smoking with exposure to domestic smoke from cooking and heating in poorly ventilated houses has been associated with an increased incidence of chronic bronchitis and cor pulmonale.

Reproductive health

Smoking is associated with increased risks of infertility. Women who smoke are more susceptible to infections of the reproductive tract and may be less fertile. For example, women who smoke more than 20 cigarettes a day are three times more likely than non-smokers to take more than a year to conceive, with three times the risk of primary tubal infertility, and a greater risk of ectopic pregnancy.

Furthermore, women who smoke and use oral contraceptives are at greater risk of cardiovascular disease than those who use the pill and do not smoke (see p. 37).

Smoking during pregnancy has been associated with premature delivery, spontaneous abortion and fetal and perinatal death. Some of the conditions present a risk for the health of the mother herself, and may occur particularly in countries where pregnant women do not generally have easy access to adequate care in the event of problems such as ectopic pregnancy, and where there is a greater incidence of anaemia among women.

In the Indian subcontinent, associations have been reported between use of smokeless tobacco during pregnancy and adverse reproductive outcome. In one study, the stillbirth rate among women who chewed tobacco during pregnancy was much higher than that among women who did not. Furthermore, the offspring of the mothers who chewed tobacco had a lower birth weight; this was associated with a decrease in the mean gestation period (*42*).

Similarly, smoking during pregnancy has been shown to increase the risk of delivering a low-birth-weight baby, independently of factors such as race, parity, maternal size, socioeconomic status, sex of child, or gestational age. There is a dose-response relationship, i.e. the more the woman smokes during pregnancy, the greater the reduction in birth weight. If the mother is able to give up smoking by the fourth month of gestation, her risk of delivering a low-birth-weight baby is similar to that of a non-smoker.

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According to research conducted in developed countries, women who smoke have 1.2–1.8 times as many spontaneous abortions as women who are non-smokers.

- In a study at three hospitals in New York, USA, the risk of having a spontaneous abortion for regular smokers increased by 46% for the first 10 cigarettes smoked a day, and by 61% for the first 20 cigarettes (*36*).

Smoking is an important risk factor for perinatal death. It has been estimated in some developed countries that if all women gave up smoking, the number of fetal and infant deaths would drop by approximately 10%. The sudden infant death syndrome, a major cause of infant mortality in developed countries, has also been linked to maternal smoking during pregnancy. Mortality from this condition has been rising in several countries and in some countries, such as France, Germany and the United Kingdom, now accounts for 20–25% of all infant deaths.

- A recent survey of more than 360 000 births in Missouri, USA, and a survey of 281 000 births in Sweden, have shown that smoking plays a significant role in late fetal and early neonatal death, especially when combined with other biological risk factors, such as high maternal age and multiple births. The Swedish study suggested that smoking was responsible for 11% of late fetal deaths and 5% of early neonatal deaths (*36*).

In those developing countries where the health of the mother and her baby is already jeopardized because of poverty and malnutrition, these disadvantages combined with the effects of smoking will have an even greater impact on the incidence of perinatal mortality.

- In Chile it is estimated that 10% of non-accidental perinatal deaths are attributable to smoking (*36*).

Menstrual disorders including dysmenorrhoea, premenstrual tension, irregular menses and secondary amenorrhoea have been associated with smoking, and women who smoke typically go through the menopause two or three years earlier than non-smokers. Cigarette smoking seems to increase the risk of estrogen-deficiency diseases, such as postmenopausal osteoporosis and subsequent fractures. After the menopause, the risk of cardiovascular disease among women becomes equal to that among men.

Other effects on well-being

Nicotine reduces the circulation of blood and the uptake of oxygen, affecting not only the skin, but also the hair and the eyes. Contrary to the images of youthful and healthy women often

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

promoted in cigarette advertising, smoking produces bad breath, gum disease, dental problems, a hoarse voice, cough, a decreased sense of smell, stained teeth and fingernails, and premature wrinkles.

Similarly, use of smokeless tobacco can stain the teeth and cause bad breath, tooth erosion, dental caries, tooth loss, a decreased sense of taste, alveolar bone destruction and gingival recession, as well as other effects on gingival and periodontal health. The healing of oral lesions has also been noted to be slower among users.

Smoking and occupational health

In addition to the direct effects caused by tobacco consumption, smoking may interact with hazardous materials in the workplace.

- Tobacco products may become contaminated with toxic agents in the workplace; they can facilitate the entry of the agent by inhalation, ingestion and skin absorption.
- Chemicals may be transformed into more harmful agents with smoking.
- Certain toxic agents in tobacco smoke may also be present at the workplace, leading therefore, to increased exposure to the agent.
- Smoking may act synergistically with toxic agents.
- Smoking can cause accidents at the workplace, for example, fires and even explosions.

Women with the same occupational exposure to environmental hazards and smoking behaviour as men are likely to develop similar health problems. Furthermore, smoking and occupational exposure may have a cumulative effect on the health of the fetus or the mother during pregnancy.

Air pollution or occupational exposures were often believed to be the main reasons for increased lung cancer mortality. While these factors have been shown to be linked to mortality from lung cancer and the occurrence of other respiratory diseases, active smoking has been shown to have a much greater effect. Indeed, in situations where there is both outdoor and indoor air pollution, active smoking multiplies the risks. In addition, active smoking is something that can be avoided; cleaning ambient air is more difficult and is a slower process.

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Studies have shown that exposure of women to smoking and asbestos multiplies the risk of lung cancer. Women who smoke and are exposed to cotton dust have a higher risk of developing byssinosis, chronic bronchitis and chronic obstructive pulmonary disease and show abnormal effects in pulmonary function tests more often than those who do not smoke.

- A study of workers in mills producing cotton and man-made fibres in England showed that the prevalence of byssinosis among women and men who smoked was 1.4 times that among non-smokers; the risk was strongly associated with the duration of exposure to cotton dust (*34*).

Passive smoking

Passive smoking, also known as involuntary smoking or inhalation of environmental tobacco smoke, is of increasing concern because of growing awareness of its detrimental effects on health. Important considerations in examining the risks of passive smoking are the composition of environmental tobacco smoke and its toxicity and carcinogenicity.

Environmental tobacco smoke has two constituents: mainstream cigarette smoke exhaled by the smoker and sidestream smoke, the smoke emitted from the burning end of the cigarette. Comparison of the chemical composition of the smoke inhaled by active smokers with that inhaled by involuntary smokers suggests that the toxic and carcinogenic effects are qualitatively similar; however, although there is a greater dilution of sidestream smoke, greater amounts of many of the organic constituents of smoke, including some carcinogens, are found in sidestream smoke.

Exposure to environmental tobacco smoke increases the risks of disease for non-smokers. This concerns women in two respects. Firstly, women smokers are fewer in number than men smokers, both in the home and at work, and therefore larger numbers of women than men are more likely to be exposed to passive smoking. Secondly, as women are usually the primary carers of the family, children are more likely to be exposed to passive smoking if their mother smokes than if their father smokes.

According to the 1986 report of the US Surgeon-General (*39*) there is compelling evidence that :

- involuntary smoking is a cause of disease, including lung cancer, in otherwise healthy non-smokers;
- children whose parents smoke have an increased frequency of respiratory infections, increased respiratory symptoms, and slightly lower rates of increase in lung function

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

as the lung matures than children whose parents are non-smokers;

— the simple separation of smokers and non-smokers within the same air space may reduce, but does not eliminate, the exposure of non-smokers to environmental tobacco smoke.

Health consequences for women

Women's health may be impaired by other people's tobacco smoke at home, at work or in public places. Several studies have shown that women who are non-smokers and whose partner smokes have a 20–50% greater risk of developing lung cancer than those whose partner does not smoke.

- The National Research Council report for 1986 stated that at least 2500 of the 12 000 deaths from lung cancer among non-smokers in the United States could be attributed to passive smoking. The total number of deaths from lung cancer in the United States in 1986 was about 136 000.

The effects of exposure to a partner's smoking may be manifested only after many years of exposure for cancers, but there are several more rapid detrimental effects on the heart and cardiovascular system.

- A study conducted among rural women in the USA showed that the relative risk of death from cardiovascular disease was 1.59, and 1.39 for all causes of mortality, for women whose partners smoked cigarettes compared with women whose partners were non-smokers, after adjustment for age, cholesterol, blood pressure, and body mass (*43*).

Women who work in the service sector often have little control over policy on smoking on the premises. Such is the case for canteen staff and most secretaries. However, it should be noted that a number of recent litigation cases in Australia, Sweden and the United Kingdom have recognized that passive smoking is an occupational hazard.

Furthermore, the effect of passive smoking on pregnant women deserves more attention. If a woman who does not smoke is exposed to tobacco smoke during pregnancy, there could be detrimental effects.

- A study in Osaka, Japan, of 3478 pregnant women showed that the prevalence rate of low birth weight increased with the intensity of exposure to tobacco smoke during pregnancy; among non-smokers, the prevalence was 3.8% for women whose partners were non-smokers, but 5.6% for women whose partners were smokers (*44*).

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Health consequences for children

Many women are becoming more aware of the danger of smoking during pregnancy, but are unaware of the risks of smoking after delivery; few regular smokers realize that their children are passively smoking.

- In a study in Japan, schoolchildren were found to have quantities of smoke-related chemicals in the urine related to the number of cigarettes that their parents smoked at home. A study carried out in the United Kingdom had the same findings, even among children aged between 11 and 16, where the amount of cotinine in their saliva was related to the number of smokers in the family (A. Charlton, personal communication, 1991).

Children who are constantly exposed to tobacco smoke have a tendency to suffer from a series of health problems in the first few years of life, especially respiratory illnesses and infections. A higher incidence of pneumonia and bronchitis during the first year of life in children whose parents smoke, as well as an increased frequency of admission to hospital have been observed. Children whose mothers smoke have also been found to have a higher frequency of acute bronchitis, tracheitis and laryngitis than those whose mothers are non-smokers. Acute respiratory illness during childhood may have long-term effects on the growth and development of the lungs, and might make the lungs more susceptible to the effects of active smoking, as well as to the development of chronic obstructive pulmonary disease in adult life.

- In the United States a study of 650 children aged 5–10 years showed that the prevalence of chronic wheezing was 1.9% in children whose parents were both non-smokers, 6.9% in children whose mother or father smoked, and 11.8% in children whose parents were both smokers. Children whose parents smoke have a 30–80% higher prevalence of chronic cough or phlegm than children of non-smokers, as well as an increased risk of asthma; passive smoking may also exacerbate any existing health problems (*39*). Asthmatic children of smokers are reported to experience improvements in their condition when their parents stop smoking (*45*).
- A recent study among children aged 8–11 years in Hong Kong found that parental smoking in the home was significantly associated with an increased risk of coughs and phlegm (*33*).

Several studies report that chronic middle ear effusions in children are related to parental smoking, being more frequent when both parents smoke.

Concurrent symptoms might appear when a child is overexposed to tobacco smoke. For example, there is a condition known as the Monday morning syndrome, which occurs when children who have been inhaling smoke during the weekend develop otitis and respiratory infections on Sunday evening and have to see

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

the doctor on Monday morning.

Another effect of passive smoking is that it predisposes and indirectly encourages children to smoke. Children of parents who smoke are more likely to smoke themselves as adolescents and adults, having been brought up in a smoking environment (see Chapter 4, p. 60).

Economic consequences

Tobacco consumption is not only a major health hazard but an economic burden on individuals and families. Economic studies in a number of developed countries have demonstrated that the costs of smoking for society are far higher than the revenue brought to the country by the tobacco industry. They include:

- The costs of direct medical care (including increased neonatal care costs).
- The cost of absenteeism from work (in Canada it has been estimated that smokers are absent from work 33–45% more than non-smokers).
- The cost of fires and industrial accidents caused by smokers and the related increased insurance costs.
- The costs related to time spent on smoking. Not only does smoking decrease the productivity of the person concerned but it may disturb non-smokers and create undue stress between workers, and between workers and employers.
- The costs related to maintenance. Smoking creates litter and necessitates more frequent renewal of decoration, furnishings and filters in ventilation systems.

The economic consequences of smoking in developing countries revolve around two main principles. Firstly, the use of tobacco increases health care costs in poor countries, where this cost is often directly borne by the individual. Secondly, many poor families spend a significant proportion of their income on tobacco instead of food. This can lead to dietary deficiencies among these families, particularly among women and young girls, who are often the last to be served at mealtimes.

- In Bangladesh, a survey has shown that smoking five cigarettes a day in a household could lead to a monthly dietary deficit of 8000 calories; this is nearly a quarter of the monthly maintenance energy requirements of a 12-kilogram child (*46*).

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The general effect of smoking is that poor families are becoming poorer, especially in rural areas, where up to 5% of monetary income may be spent on tobacco. Smoking during pregnancy adds to poverty, malnutrition, and anaemia, all of which contribute to infant death, particularly in developing countries. However, for a few countries, tobacco is also an important cash crop, and reductions in tobacco production should be compensated for by the promotion of other crops.

Some of the economic consequences of tobacco consumption may be more acutely felt by women. For example, special mention can be made of the consequences of absenteeism from work of the wage-earning partner in countries where no compensatory scheme exists; or of the consequences of children falling ill from passive smoking causing increased absenteeism from work for the person who has to take care of them.

In both developed and developing countries, the effect of the illness or death of a father will have catastrophic effects upon the life of the children and the surviving partner both psychologically and economically. If it is the mother who dies, the consequences for the children may be particularly dire.

Furthermore, in some developing countries the tobacco growing and manufacturing industries employ a substantial proportion of women. Hence, when tobacco consumption decreases, it will be necessary to consider alternative employment for these women.

Assessing further the effects of the epidemic

In developed countries the effects of smoking on women's health have been well documented. In view of their traditional social and reproductive roles, these effects may pose more risks for them than would the same behaviour in men. This greater risk should be a source of concern in all countries as smoking rates among women are increasing. There is a need for additional assessment and appreciation of the risks incurred by women compared with men. Particular care should be taken to investigate all aspects of the influence of smoking on maternal death.

In particular, there is a growing awareness of the effects of passive smoking on health but while the evidence for lung cancer is clear, further investigations are needed to clarify the role of environmental tobacco smoke in the etiology of other disease conditions and to determine the long-term consequences of passive smoking for children.

While there is now enough information to justify action, the paucity of data in many developing countries makes it a matter of

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

urgency for studies to be conducted in these countries, to confirm the information found in other parts of the world. Section 2 of the country profile in Annex 1 gives an outline of the type of mortality and morbidity data necessary to assess the scale and effect of smoking epidemics; and section 3 provides the basic economic data necessary to analyse the economic impact of tobacco in the individual countries.

In addition to the studies described above, further socioeconomic investigations and in-depth studies are required on the relationship between smoking, family nutrition and nutritional status of women and young girls in poor countries.

A deeper understanding of the consequences of maternal illness on family life would allow a more comprehensive assessment of the wider consequences of the consumption of tobacco by women. It would also be desirable to investigate the psychological and economic effects of the death of the main carer of the family.

Chapter 4

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Why women start and continue to smoke

Many factors affect the initiation and maintenance of tobacco use by girls and women. Both internal factors such as self-esteem and self-image, as well as external factors such as social acceptability and tobacco advertising are important. Initiation factors are complex and differ, not only between developed and developing countries, but also between different groups within countries. Maintenance of consumption of tobacco is due both to nicotine dependence and to the difficulties in quitting which stem from different sociocultural backgrounds and social-structural factors such as multiple roles, low income, stress and coping behaviours.

Women are also specifically targeted by the tobacco industry through special brands, and through advertising and promotions which target their aspirations. There is also the issue that the fear of losing revenue from advertising prevents the media from reporting on the risks to women's health from smoking, to the extent warranted by the problem. Media collaboration is needed to make women aware of the hazards of smoking and help them stop. Smoking is very much a women's issue and should be recognized as such.

Smoking usually begins in adolescence, the time for discovery, challenge and experimentation, but the process of becoming a smoker may have begun in childhood.

The reasons that will motivate women to continue smoking are quite different from those pushing young girls to start. While there seems to be little gender difference in relation to why teenagers start to smoke, in some developed countries more young girls smoke than young boys. Smoking patterns vary considerably among the young from one country to another, depending on the social acceptability of tobacco, sociocultural and religious factors, the availability of tobacco, advertising, the relative cost of tobac-

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

co, and health education activities. All these aspects must be taken into consideration to understand the various stages involved in becoming a smoker, as well as the factors influencing the maintenance of smoking.

When young girls start smoking

Although some try their first cigarette as children, the majority of smokers start smoking in their teens, and most girls experiment with cigarettes around the age of 10–14 years. Girls who move from occasional to regular smoking are more likely to continue smoking into adult life. In most countries few people start smoking after the age of 18–21 years; however, in some countries such as China, prevalence is low during adolescence and increases during early adulthood.

Why young girls start smoking

The process of becoming a smoker is complex, and is intrinsically linked to social and individual motivations. Most young people try smoking for several reasons, including: stimulation and challenge (rebellion against parents or society, curiosity, excitement); to create an identity and satisfy need for self-esteem — to feel good, appear more adult and sophisticated, and look better; and to belong to a group, to be approved and accepted by friends who smoke and to avoid peer group disapproval or rejection. Many young girls also regard smoking as a way of keeping slim.

Furthermore, adolescence is often a period of rebellion and smoking is one of the risk-taking behaviours that may appeal to young girls. Smoking is often associated with alcohol and drug use as well as sexual activity in female teenagers. While these behaviours are frequently concurrent, the motivating factors can be diverse and depend on the environment.

The process of becoming a smoker essentially involves four stages: (1) awareness; (2) initiation/experimentation; (3) habituation; and (4) maintenance/dependence. These stages are influenced by sociocultural, environmental and personal factors, the influence of which is dynamic and can change over time. For some girls and women, opportunities, age or class position will affect the process of initiating and maintaining smoking.

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Sociocultural factors

Social acceptability

Social acceptability refers to a situation within a specific cultural context, in which a particular behaviour is considered appropriate, so that those demonstrating the behaviour are permitted to continue, even if they are harming themselves or others. It also implies that societies may be reluctant to interfere in this behaviour.

What is particularly dangerous about tobacco is the fact that it is a legal drug which in many countries has gained a social acceptability that hitherto has gone unquestioned. Yet, in some countries, such as countries where Islam is the predominant religion, smoking by women is not socially acceptable and may even be forbidden. According to the Koran, anything that is harmful to health and to the individual, such as smoking or use of alcohol, both of which are considered destructive, should be banned. In other countries, legislation and other measures to control smoking may help to keep prevalence rates low. Smoking may, for example, be prohibited in public places, or forbidden among certain age groups, e.g. in Japan, smoking is only allowed from the age of 20. Religious and cultural beliefs may also act as a deterrent.

An overview of the estimated prevalence of smoking among women in various developing countries indicates that women are sensitive to social or religious acceptability, factors which contributed to keeping prevalence rates low among women in developed countries in the past and which are responsible for keeping rates low in most developing countries today. Care should be taken to ensure that if these social attitudes begin to disappear as these countries develop, then specific educational programmes are created so that the prevalence of smoking among women will not increase.

In the experimental stage (less than one cigarette per week), the teenager tries to create her self-image in society and this becomes reinforced with time. It is an image that she sees in others, and that is generally imposed upon her by the positive and desirable images of smoking promoted by tobacco advertising. Such images are potentially powerful influences in adolescence. The "social aspects" of smoking (e.g. use of certain brands of cigarettes), although reinforcing smoking among young smokers, become less important as the smoking behaviour develops, dependence increases and smoking becomes part of the daily routine.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Parental influence

Most children first learn about smoking from their parents, teachers or other influential figures, and are more likely to take up smoking if their parents smoke or have permissive attitudes to smoking. Learning to smoke starts with the awareness stage, where the young girl's attitude towards smoking is influenced by parents or relatives who smoke. She learns about the "dynamics" of smoking, the postures, and the places to smoke and, being a passive smoker, becomes accustomed to the smell and sight of cigarettes. In developed countries, girls in particular appear to be influenced by their parents' smoking behaviours and attitudes, although this decreases as they become older. Mothers have a particularly strong impact on their daughters' smoking behaviour, whenever they are taken as role models.

- In the United States studies have found that girls are five times more likely to take up smoking (20.3% versus 4.1%) if they live with one or both parents and an older sibling who smoke than if there are no smokers in the household (*47*).
- A study in New Zealand revealed that the percentage of children who had tried smoking and whose mother or father smoked was highest at 9 years of age and progressively decreased as they became older. At 9 years of age, having a friend who smoked did not influence smoking behaviour; by 11 years of age, however, it made a difference. Thirteen-year-old girls tended not to smoke if their mother was a non-smoker. Girls aged 9–15 years seemed to be influenced to try smoking if their father smoked or was an ex-smoker. Those who had never smoked by 15 years of age were likely to have a father who was a non-smoker (*48*).
- In Canada and the United Kingdom, studies have shown that children whose parents are smokers are twice as likely as children whose parents are non-smokers to become smokers themselves.

Parents' authority in prohibiting smoking has also been shown to play an important role in preventing early uptake of smoking.

- A study in Norway showed that 62.5% of 15-year-old students whose parents allowed them to smoke smoked daily, compared with 16.7% of students whose parents did not (*12*).

Peer influence

Having friends who smoke can be another predictor of future smoking. Many young people try their first cigarette because of peer influence; almost 75% of all first cigarettes are smoked with another teenager. The concept of "peer pressure" has been consistently identified as a factor influencing smoking behaviour among young people. Many young people experiment with smoking in groups, and peer approval is an important mechanism

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for maintenance of smoking behaviour. Young people who smoke usually do so "with friends" and smoking clearly represents a sociable activity for them. Fear of rejection may lead a young girl to try a cigarette when offered one by friends whom she values. Refusal to do so might mean losing her friends who smoke, being isolated from the rest, set aside and ridiculed. On the other hand, most young people who are non-smokers have friends who do not smoke. For these reasons helping young women develop the confidence and skills to resist social pressures to smoke would contribute to a reduction in the prevalence of smoking. It is also important to show them how non-smoking can lead to an improvement in their social lives.

- An anti-smoking programme in Italy (Table 13) demonstrated that students whose best friend smokes are more likely to be smokers than are students whose best friend is a non-smoker (*49*).

Table 13. Concordance and discordance in smoking behaviour among friends (Italy: 562 students)

Respondent	Best friend	
	Smoker	Non-smoker
Male		
Smoker	61.8	38.2
Non-smoker	36.6	63.3
Female		
Smoker	79.7	20.3
Non-smoker	27.8	72.2

Source: reference *49*.

Personal factors

Self-image

Smoking is portrayed in advertising as a means of attaining maturity, adulthood, and popularity, and of being sophisticated, sociable, feminine, and sexually attractive. In developed countries, where the media promote an image of female attractiveness which equates being thin with desirability, evidence shows that weight control and dieting are major obsessions among adolescent girls. For these girls, being slim gives them self-confidence and is fashionable.

- A Canadian study showed that two out of three teenage girls attending schools run by the London Board of Education, Ontario, were on diets

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

by the age of 13, and 30% of them had used drastic measures such as drugs, laxatives, and vomiting while dieting. Most of these girls had also reduced their degree of participation in sports and other physical activities (*12*).

- In the United States, a survey (NIDA High School Senior Survey) showed widespread use of non-prescription diet pills among girls aged 13–18 years. Another survey showed that more smokers than non-smokers used diet pills (*47*).

Self-esteem

Studies have repeatedly found that girls who have low self-esteem are more likely to take up smoking. A recent WHO study in Europe (*50*) found that girls who felt that they had a lot of control over their health and life in general were less likely to become smokers than those who felt they had little control. Research in developed countries has shown that children who smoke are more likely to be under-achievers at school, have low academic goals, be alienated from school and be less interested in continuing with their education than children who are non-smokers.

Using smoking to bolster self-confidence stems from the widespread belief that smoking can help calm nerves, control moods and alleviate stress — all important concerns during adolescence. By showing attractive young women, with handsome male partners, socializing with groups of clearly successful and confident people, tobacco advertisements accurately evaluate young people's insecurities, and convince them that they can develop these desirable qualities if they smoke.

- A study in the United Kingdom showed that having positive beliefs about the advantages of smoking was an important predictor of taking up smoking in girls but not boys. Girls who thought that smoking made people look more grown-up, helped calm nerves and control weight, gave confidence and was enjoyable, were the most likely to start smoking (*51*).

Disposable income

For many young girls the initiation of smoking corresponds to a rise in disposable income. It has been shown, in a few countries, that teenagers may be even more sensitive than adults to the relative price of cigarettes and that the price affects not only whether teenagers smoke, but also how much they smoke. Thus a rise in the price of tobacco products can influence the level of consumption; however, even with little money, priority may be given to the purchase of cigarettes (see p. 67).

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Knowledge

Knowledge, beliefs and attitudes about smoking also influence smoking behaviour. In developed countries, studies have shown that adolescents who smoke are usually less knowledgeable about the health risks involved, do not believe that smoking will affect them personally, or consider that the short-term benefits outweigh any health risks. However, knowledge alone is not sufficient to prevent smoking among adolescents, since many misinterpret the risks involved.

In developing countries, young girls' knowledge about smoking and its effects on health is likely to be much lower because of the lack of systematic health education programmes and the structural barriers such as scattered rural populations and high levels of illiteracy.

- In 1986, 92% of adults and 85% of smokers in the United States believed that smoking is a cause of cancer. The proportions of smokers who did not believe that smoking increases the risk of developing lung cancer, heart disease, chronic bronchitis and emphysema were 15%, 29%, 27% and 15%, respectively. These percentages correspond to between 8 million and 15 million adult smokers in the United States. Only 18% of smokers were "very concerned" about the effects of smoking on their health, and 24% were not at all concerned. About half of the smokers incorrectly believed that a person would have to smoke 10 or more cigarettes a day before health would be affected (*36*).
- In Finland, it was found that many smokers, while they generally accepted that smoking was harmful, thought that their consumption level was low enough not to cause any serious harm. In many studies it has been shown that most smokers, especially young smokers, believe that they will not smoke in 5 years' time, i.e. they will give up smoking in the near future (*52*).
- In Canada, a study of smoking behaviour among 17-year-olds found that smokers were less knowledgeable about the health risks and had more positive attitudes to smoking, were more likely to have parents and friends who smoked, were less physically attractive and in poorer physical condition, had lower levels of academic achievement, had less well-educated parents and were of lower socioeconomic status (*12*).

Environmental factors

Advertising and sales promotion

The tobacco industry is dependent on a mass market. Because many smokers die prematurely and others quit, the only way for the tobacco industry to maintain high levels of economic activity and profits is to recruit new smokers, especially from among women and the young. The art of marketing is to tailor a product

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

to appeal to specific target groups after a careful analysis of the potential market within a country, by projecting its image through packaging, advertising and promotions, and adjusting whenever possible and necessary its price and availability.

The tobacco industry actively promotes the view that tobacco promotions, including advertising and sponsorship, do not increase cigarette sales or encourage people to start smoking, but merely affect the brand choice of adult smokers. There is now considerable evidence from developed countries that children are aware of tobacco advertising, that tobacco promotions influence whether young people start and continue to smoke, and that in countries that have banned cigarette advertising, cigarette smoking has declined more rapidly among young people than in countries that have not.

- Although tobacco advertising had been banned in the countries of central and eastern Europe, the recent economic changes have raised the question of allowing advertising. The transnational tobacco industry has responded by launching an extensive marketing and advertising campaign in these countries. In Hungary, for example, where tobacco advertising had been banned by a ministerial regulation (not by a law), the situation is now being reconsidered. The transnational tobacco industry has begun sales promotions by distributing patches, umbrellas, watches and similar items which tempt the local small businesses and are already visible in the streets. There are few established mechanisms and little experience in enforcing the existing regulations (personal communication, T. Piha, 1991).
- In 1986, a transnational tobacco company introduced a "female brand" of cigarettes into Hong Kong, clearly targeted at young women, with images of emancipation, slimness, beauty and desirability. Only about 1% of women under the age of 40 years smoked in Hong Kong at the time, so this was a clear attempt to create a market. It would thus seem to have little relevance to "brand-switching", which the tobacco industry frequently claims is the purpose of its advertising.

Over the past few years in developed countries and in some developing countries, the tobacco industry has targeted both its products and its advertising at women in a number of ways:

— The promotion of brands through advertisements and sponsorship using images and messages that depict smoking as being glamorous, sophisticated, romantic, sexy, healthy, sporty, relaxing, liberated, rebellious and, last but not least, slimming, although in countries where to be slim is not the fashion, this message is omitted. Cigarette companies have also portrayed smoking as a "torch of freedom", a "tool of beauty" and a sign of progress.

— Advertising in women's magazines. This not only encourages smoking by women but may also discourage

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reporting about the risks of smoking to women's health. In some countries, it has been shown that magazines that are dependent on revenue from cigarette advertising are less likely to cover the health hazards. This has been demonstrated by the case of a famous magazine in the USA that disclosed the details of the compromises it had been forced into before it stopped including advertisements in 1990.

- A survey (1990–91) of the most popular women's magazines in 13 European countries, which together have over 50 million female readers, found that 69% of the magazines accepted cigarette advertisements and only 22% had given major coverage to smoking and health issues in the previous year. Although the majority of these magazines refused or avoided using images of models smoking, two out of five had no restrictions on using such photographs. Indeed, some magazines, particularly those from France, Italy and Spain, appeared to be promoting smoking through the widespread use of positive images of models smoking (*53*).
- It has been estimated that in the United Kingdom, despite restrictions on tobacco advertising, a collective readership of 7 million women aged 15–24 years are exposed to tobacco advertising through women's magazines. Magazines that refused cigarette advertisements were more likely to have covered smoking and health issues than those that accepted cigarette advertisements. Indeed, revenue from cigarette advertising increased between 1985 and 1989, while coverage of smoking and health issues declined (*53*).

While a few television and radio networks and magazines now reject tobacco advertising, others attempt to justify it with arguments such as:

— readers are responsible for what they read and can make their own judgements;

— the media are not responsible for the outcome as far as cigarette advertising is concerned;

— cigarette advertisements are acceptable as long as they carry a health warning;

— the advertising policy is determined by the publishers and there is no right to impose censorship.

Other sectors of the leisure industry, such as sport and the arts have also become dependent on revenue from tobacco companies, particularly for the organization of international sporting events and the staging of expensive productions. Glamorous models, successful individuals and sporting personalities, teenage pop idols and film stars all feature in cultural events, TV soap operas, plays and films which depict smoking as being an essential component of their success. These programmes, films and maga-

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

zines reach many different audiences around the world and, particularly in developing countries, may create aspirations and images of sophisticated life often equated with Western life-styles, which are both unrealistic and harmful to their audience's health.

Cigarette companies also have other ways of targeting women, such as through female sports sponsorship (e.g. tennis), support of women's organizations, and funding of other activities.

In the developing countries there are few limitations on tobacco advertising, and therefore its influence on young girls, who may have little knowledge about the harmful effects of smoking, may be even more powerful than in developed countries. At present tobacco advertising in developing countries tends to be directed at the general public, although there is evidence that women are becoming special targets. In Asia, women are considered to represent a potential market for tobacco, and evidence suggests that even where tobacco advertising is prohibited by regulations, such as in China, it is still widespread.

Product development and marketing

As public awareness of the health effects of tobacco has grown, in many countries the tobacco companies have responded by increasing the amount and variety of tobacco products and promotions that are targeted specifically at women. A common characteristic of these efforts is an attempt to pre-empt or allay health concerns by introducing cigarettes with lower tar and nicotine yields; however, these do not significantly lower the risk of many tobacco-related diseases. Indeed, people who switch to low-nicotine cigarettes often compensate for the reduction by inhaling more deeply or smoking more often.

The tobacco industry may even create "women only" brands, using particular colours, shapes, sizes, names and tastes to give women the impression that if they smoke, they will be successful, youthful, happy and healthy. This has been done in developing as well as developed countries, as exemplified by the promotion of a "female brand" in India in 1990. This marketing is often complemented by tobacco sales in places frequented by women, such as dress shops and grocery stores. This approach needs to be recognized early if it is to be properly counteracted. Another marketing strategy designed to appeal to women may be to sell the cigarettes in packages containing fewer cigarettes.

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Availability

The easier tobacco is to obtain, the more likely it is that young women will use it. It is important to limit its availability to prevent dependence. As mentioned earlier, in some countries such as Japan, cultural attitudes may discourage girls from purchasing cigarettes, while in others, social or religious factors may prevent women from smoking. However, many countries do not control tobacco sales to children, and even in countries where there are laws prohibiting such sales, these are often not fully enforced and children are still able to buy cigarettes, e.g. from cigarette-vending machines.

Price

Studies in Europe and the United States have shown that the relative price of cigarettes is an important factor in determining the prevalence of smoking and tobacco consumption. Young people appear to be even more responsive to cigarette price changes than adults. Studies carried out in Austria, Finland, Ireland, the United Kingdom and the United States have shown that the demand for cigarettes varies inversely with price; when prices increase, cigarette consumption decreases. The response depends on the age and socioeconomic status of the smoker. Similarly, a study in rural Nepal has shown that saving was a major reason for stopping smoking.

In some countries it is difficult for certain groups to afford cigarettes. In Peru, for example, cigarette smoking is adopted by the more affluent and literate Peruvians and the Indian population rarely smokes because cigarettes are too expensive. Poverty may also mean limited access to television and other media advertising. In other countries, however, cigarettes are made available to low socioeconomic groups. For example, in Egypt and India, cigarettes are sold singly as well as in packs, and cheaper forms of tobacco products (bidis, hand-rolled cigarettes and hookah) mean that many people can afford to smoke.

Smoke-free environment

A smoke-free environment, in public or at home, is self-promoting. A young girl who is used to living in a smoke-free environment is likely to perceive the odour of tobacco smoke as unpleasant and later on to insist on clean air at work as well as at home, thus contributing to the concept of a tobacco-free society and life-style as the social norm.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

Social disadvantage, assessed by measures such as parents' education and occupational level, has been shown in several developed countries to be a predictor of smoking. This may be partly because children in these countries who grow up in socially and economically disadvantaged families and communities are more likely to be exposed to smoking through their families and the community. It might also be because they have less access to other leisure and recreational pursuits as well as experiencing greater levels of alienation.

Smoke-free workplaces prevent people from starting to smoke in stressful situations, which are reported to be a cause of smoking initiation among young workers. Smoke-free public places such as restaurants are important in underlining the prevailing social norm, and also in helping smokers to quit and preventing relapse.

Smoke-free environments are particularly important in schools, where they should form part of a comprehensive policy on smoking which includes staff and students.

- A study in the United States found that the prevalence of smoking was lowest in schools that had the most comprehensive smoking policies which covered smoke-free environments as well as education on smoking (*54*).

Why do smokers continue to smoke?

The maintenance of smoking behaviour has been studied in many developed countries where it has been found to be influenced by a number of interrelated factors. The pressures that encourage a young girl to smoke are also important in determining whether she continues or decides to quit, and whether she is successful in doing so. As the experimenter becomes a regular smoker dependent on nicotine, a young woman's rationalization of her behaviour and dependence may be added factors in her continuing to smoke.

Some of these factors may also be valid in developing countries; however, research is required to identify which ones and to determine those that may be most prominent in the context of economic development.

Physiological factors

Dependence

Nicotine is a potent psychoactive drug (see Chapter 3). Once

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the teenager has progressed beyond the initiation and experimental phases and her body has adapted to the effects of nicotine, smoking behaviour becomes established and dependence is created.

- A recent study in the United Kingdom has indicated that nicotine can play an active role in reinforcing smoking from a very early stage. The saliva cotinine concentration of young occasional smokers indicated that some were inhaling and obtaining pharmacologically significant doses of nicotine (*55, 56*).

Mild, low-nicotine cigarettes facilitate the initiation of smoking during the learning process, and as a young girl or woman begins to smoke regularly, her body gets used to regular doses of nicotine and she becomes physiologically dependent. She develops a pattern of daily smoking, such as smoking after meals and at coffee breaks. Having partners and friends who smoke reinforces the dependence.

Weight

Since many women in developed countries believe giving up smoking will lead to a weight gain (and studies have shown a weight gain of about 2–4 kg after giving up smoking among some women), they may continue to smoke in order to control their weight. Smoking becomes a way of avoiding eating, an appetite suppressant or an aid in dieting. It is well documented that smokers have a lower mean weight than ex-smokers and non-smokers. Although a variety of factors may explain this observation, there is evidence of a direct effect of smoking on metabolism. Studies in animals have shown that administration of nicotine increases metabolic rate. Furthermore, nicotine has been shown to have a greater effect on body weight and eating behaviour in female rats than in males. In humans, nicotine has been found to cause a marked increase in metabolic rate, both at rest and during light exercise.

Psychosocial factors

Psychosocial factors influencing the maintenance of smoking can be negative, such as stress and negative emotions, or positive, such as to obtain pleasure; the former seem to be the major influence in women, the latter in men.

Negative emotions

Women smokers report that smoking helps them cope with loneliness, sadness, grief, anger and frustration. It is something to

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

hold on to when something else is lost, as it is comforting and is sometimes the only support available.

Many women find themselves under constant pressure at work and at home. The employed woman often has many roles to assume — a job to perform, a boss to please, a house to run, a family to care for — and in having to meet the demands, expectations and needs both at work and at home, she is confronted with many role conflicts. Many women smokers believe that smoking calms their nerves, relieves stress, and reduces feelings of anger and frustration. In societies where it is not acceptable to show emotions such as anger, hostility, and aggressiveness, cigarettes help restrain those negative feelings. In addition, the smoking of a cigarette gives the opportunity for a pause in a busy day.

Many women who are dependent on tobacco also believe that they cannot cope without cigarettes. Many smokers, including young smokers, experience nicotine withdrawal symptoms on quitting, such as increased craving for nicotine, irritability, restlessness and decreased concentration. Thus, rather than being a direct effect of their smoking, feeling calmer may result from relief of incipient withdrawal symptoms. The critical testing times for smokers who decide to give up are associated with negative emotions, and there is evidence that relapse is more likely to occur in such situations.

Some women may structure their day with cigarettes, using them as excuses for breaks or as rewards. Women in low-status jobs may smoke to break monotony and help them deal with frustrating tasks. Many women on low incomes, with little time to themselves, see cigarettes as their only luxury.

A young mother surrounded by children may find that the only moment of peace and relaxation, and indeed, her only treat of the day, is to light a cigarette while having a cup of coffee. Since young mothers often feel isolated from the world outside the home, they may use smoking as a way of identifying with the adult world, escaping the pressure of daily tasks, and separating themselves from their children.

Social environment

Women may smoke to maintain an image, to be accepted by others and to adhere to social conformity. The behaviour may be reinforced by the environment, such as friends who smoke, smoking areas, tobacco advertising and social pressure.

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Which women smoke?

In countries with the longest history of widespread smoking, it was the more affluent and educated women who first took up smoking, but they were also the first to give it up. As described in Chapter 2, the women who are now most likely to smoke, at least in developed countries, are those on low incomes, with low-status jobs, or who are economically inactive (unemployed), are single, separated or divorced, have low levels of academic achievement, or are from underprivileged ethnic groups. Lack of education and low income may also mean less access to adequate information concerning smoking and its effects on health and less opportunity to change their way of life.

- In the United Kingdom, quantitative and qualitative research has shed light on why mothers on low incomes continue to smoke. These studies have revealed the budgeting strategies that poor households develop in the struggle to meet needs and avoid debt. Poor families give priority to essential items such as housing, fuel and food and severely restrict spending on non-essential and personal items (such as clothes, hobbies and alcohol). Consequently, minimal spending by women might be anticipated as they are usually responsible for making ends meet, particularly those in households with children where the needs of the younger generation place additional financial pressures on the adults (*57*). However, tobacco is one exception to the economic rule by which low-income families organize their finances. Unlike most other categories of household expenditure, spending on tobacco is inversely related to income (see Table 14).

  Furthermore, spending on tobacco among low-income households with children is higher than among low-income households without children.

Table 14. Weekly expenditure of households with two adults and two children in the United Kingdom, 1988

Item of expenditure	Weekly expenditure (£)[a]			
	Household income under £175 a week		All households	
Housing	15.52	(13)	32.51	(16)
Fuel, light, power	10.08	(8)	11.41	(6)
Food	34.21	(28)	42.99	(22)
Alcohol	5.46	(4)	7.84	(4)
Tobacco	5.55	(5)	4.24	(2)
Clothing, footwear	7.40	(6)	15.92	(8)
Household goods	20.05	(16)	33.37	(17)
Transport	12.75	(10)	27.99	(14)
Services	11.59	(9)	21.56	(11)
Miscellaneous	0.68	(0.5)	1.28	(0.6)
Total	**123.29**		**199.11**	

[a] Figure in parentheses gives expenditure as a percentage of total weekly expenditure.

Source: reference *57*.

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

The highest per capita expenditure on tobacco is among one-adult households with children.

Qualitative studies of caring highlight the experiences that underlie these associations between smoking, poverty and caring for children. In one study of 57 mothers caring for children in low-income households, half were smokers. These women described how smoking was associated with breaks from caring, where they rested and had something to eat and drink. Cigarettes were not only associated with the maintenance of normal caring routines, they were part of the way women coped with breakdowns in these patterns of caring. In particular, smoking was described by smokers as a major strategy employed when their children's demands became "too much to cope with".

When asked what they did in these circumstances, the respondents typically described how they created a space — symbolic if not physical — between themselves and their children and then filled this space with a self-directed activity. Smoking a cigarette was the major self-directed activity for mothers who smoked.

In these conditions, other luxury items and leisure activities had been surrendered in the pressure to make ends meet. As other studies have found, the level of spending on clothes, shoes, make-up, haircuts and non-essential food items by these mothers was low. Within a life-style devoid of personal spending, cigarettes could be the only item that women bought for themselves (57).

Women who are subject to discrimination or oppression (such as battered women, victims of sexual assault, immigrants, racial minorities, single mothers, and women with disabilities) may be more likely to be smokers. Research is needed among these groups to develop and make available appropriate public education and public information programmes, as well as support and counselling services on tobacco control.

In countries where cigarette smoking is comparatively new among women, the fact that it has been adopted by the more affluent professional women may be due to the more liberated environment in which they live and work, their relative affluence and their urban environment which expose them to tobacco advertisements and make cigarettes more accessible. Nevertheless, it should be emphasized that in some countries, such as India, women in rural areas still use tobacco more than those in urban areas do.

Women as role models

In many occupations, women present a social and behavioural image which is taken as a role model by girls and other women.

Women, as primary carers and educators of children and others, are in a powerful position to influence smoking behaviour.

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Consequently, they can play an important role in smoking prevention and cessation.

For children and adolescents, their mothers, friends and schoolteachers can all have a positive effect by encouraging them not to smoke and by setting an example. Later on, women in health professions, i.e. primary health care workers, nurses, and doctors, can also serve as educators by informing and advising patients, such as pregnant women or women on the pill. As women may prefer to go to female doctors, they may be more likely to confide in them, express their concerns, and if they smoke accept advice on quitting. Studies have shown that physician advice is particularly effective with light smokers.

Women in sport and the media can also reverse the social acceptability of smoking among women and show that those who do not smoke are healthy, attractive and beautiful, and that intelligent women do not smoke.

Women in political, governmental and nongovernmental organizations, while dealing with women's issues, are well placed to encourage women to stop smoking and can help promote nonsmoking behaviour. They can also be instrumental in the passing of legislation and/or regulations.

Activists in the women's movement can also influence the image of cigarette smoking. Equating smoking to women's equality has been criticized by a number of feminist thinkers. Smoking is a feminist issue in terms of the smoking-related morbidity and mortality in women. It is also identified as a feminist issue because cigarette advertising is promoting a distorted and misleading image of smoking.

Documenting the epidemic

To determine the extent of the epidemic and to develop the means for action against the consumption of tobacco by women, not only are standardized epidemiological data necessary, but behavioural studies are needed to increase our understanding of the factors that influence smoking and smoking behaviour in different populations.

While the motivations of girls and women in developed countries have been partially documented, not enough has been done to identify the determinants of smoking for women in developing countries. An analysis of the influence of the different factors encouraging or preventing women from smoking in different economic and sociocultural settings are important subjects for health system and socioeconomic research at national and regional levels

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

and universities should be encouraged to undertake such research. Sections 4, 5 and 6 of the country profile in Annex 1 indicate the type of information that should be collected to document the epidemic in individual countries.

While legislation against tobacco advertising is a priority, in countries where such laws have not yet been passed, research is needed on the marketing techniques used to target women and girls.

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Chapter 5

Prevention and cessation of tobacco use

Prevention and cessation of smoking among women and girls require a series of measures, including public information, school health education, and restrictions on marketing, advertising and the availability of tobacco. However, most current tobacco control programmes fail to recognize and address the specific needs of women. Thus, women and girls are often not armed with the appropriate knowledge and skills to avoid starting to use tobacco or to stop. Currently, organized cessation programmes are used by only a small proportion of smokers; the majority of smokers who quit do so without the support of a formal programme, though they are influenced by information propagated through campaigns or more generally. Evaluation studies need to address both approaches to quitting. Whenever prevention programmes are developed, they should include, from the onset, components specific to tobacco consumption by women. Evaluation studies and research must cover sex-specific issues in order to develop adequate prevention and cessation programmes. The transferability of tools and techniques relevant to women is the key to their application in developing countries, where the priority is to develop programmes that are immediately affordable.

Many factors are involved in determining whether a girl starts and continues to smoke, if and when she attempts to quit, and her chances of success in quitting. The relative importance of these factors varies between individuals and populations and it is, therefore, neither possible nor appropriate to select just one or two to be addressed.

Accordingly, comprehensive action to address all the relevant factors is needed. A combination of measures, at the community, national and international levels, should be aimed at discouraging the uptake of smoking and encouraging cessation. There are

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

already many examples of effective action, particularly in developed countries, which can be drawn on. However, there is a need to adapt these approaches to make them appropriate to the specific situation in different countries. It will also be necessary to develop new approaches in areas where current initiatives are limited or unsuccessful.

Preventing the uptake of smoking

Possibly nowhere more than in tobacco control is the saying "Prevention is better than cure" more true. However, much remains to be done to ensure that preventive measures are used effectively.

Information and health education

School health education

There have been a number of successful health education programmes; however, the health education needs of women smokers in developed countries were neglected until the mid-1980s. Even then, health education was often inappropriate for them and thus the reduction in the prevalence of smoking among girls has been less than that achieved among boys. It is essential that developing countries should not be tempted to dismiss the need for health education for women on the basis that smoking is not currently a major problem.

Health education is initially given by parents in the home, consciously or unconsciously. The next contact will be through health education programmes in schools. However, there is no universal recipe that will guarantee the success of school health education programmes on tobacco; success is heavily dependent on social, cultural and behavioural factors. The effectiveness of such programmes has varied considerably, with more positive results being observed in programmes developed towards the end of the 1970s and during the 1980s.

The programmes that have been successful in reducing smoking rates in children are those that have done more than simply provide information about the long-term health effects of smoking — which often means little to young girls and women — and have attempted to improve personal and social skills. These programmes point to some common factors for success, such as the incorporation of a "tobacco or health" component within a more

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comprehensive approach covering other essential elements of a healthy life-style. The programmes thus aim to improve young people's knowledge about the effects of tobacco use through discussions and participatory learning methods; to develop personal and social skills to help young people resist social pressure to smoke; to involve the family, in order to reinforce the health education given in school; and to influence school authorities to provide smoke-free environments and especially, to prevent the teachers from smoking.

- Studies in Norway and the United Kingdom have demonstrated that the involvement of parents in prevention programmes can lead to significant reductions in the tobacco consumption of children and parents (*50*).

The age at which young girls should start to be educated about the harmful effects of tobacco consumption will depend on the country. Schools could use a "spiral curriculum" approach, i.e. the subject is taught not just once but at several different points in the child's education, in ways that are appropriate to the child's stage of development. This would involve educating children in nursery schools and elementary schools about the danger and unpleasantness of smoking before they begin to think about taking it up, and teaching them to regard non-smoking as the social norm before they reach their teens. Such a programme has been introduced in Canada, to address children aged 3–6 years. This could be followed with children aged 9–10 years, before they start to experiment with tobacco, with information on health and how to deal with social influences. This could be reinforced later with programmes aimed at maintaining non-smoking behaviour and helping children who have taken up smoking to give it up. Although many programmes have been shown to influence knowledge and attitudes to smoking, only a few have had any impact on delaying or reducing onset of smoking.

- Evaluation of an anti-smoking educational programme among Italian adolescents showed that most teenagers knew about the harmful effects of cigarette smoking, but this did not prevent them from smoking. However, the programme had some effect on occasional and light smokers (*49*).
- Similarly, a study of children aged 9–15 years in New Zealand showed that knowledge of health risks did not prevent them from smoking (*48*).
- Data from the United Kingdom revealed that both children who were smokers and those who were non-smokers knew about the harmful effects of smoking. For smokers, however, such knowledge was counterbalanced by positive perceptions related to smoking such as being part of growing up, better mood, increased confidence, and making friends more easily (*58*).

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

- The British Cancer Research Campaign has developed two programmes which have been successful in preventing young people from smoking. "The problems of C932" is aimed at 9- and 10-year-olds and involves parents. "The search for Dr Ricardo" is a video targeted at children of about 12 years old, who are at an age when they are likely to start smoking.

In many developed countries, school health education programmes have been effective in increasing young women's knowledge about the health effects of smoking, increasing their awareness of influences such as advertising and social pressure, and developing their self-confidence, self-esteem and social skills to resist pressure to start and continue smoking. Since girls often believe that smoking helps them deal with stressful situations, many educators consider that developing girls' self-esteem and competence to solve problems themselves is the most appropriate and effective way of enabling them to cope with life without resorting to smoking.

School health education has limitations, however, arising from the amount of time students may be exposed to negative influences through contact with peers, family, and the media compared with the little time spent on health education. In many developed countries it has been found that young people who become regular smokers are more likely to be alienated from school, and are therefore unlikely to be reached or influenced by school health education programmes. In addition, in developing countries many young girls do not attend school. It is therefore important that programmes are developed that use other youth and educational networks such as youth clubs, religious organizations and sports organizations, particularly as they adopt less didactic approaches.

Public information

Most public information programmes have not been sufficiently sex-specific; they have not been targeted at young girls. Messages on smoking and health can be communicated through several channels, selected for their appeal to women and adapted to the needs of those in developed and developing countries. The objectives of such public information programmes are:

— to increase women's awareness of the hazards of smoking;

— to increase awareness among decision-makers of the need for smoking control and of the possibilities for action;

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— to control the smoking epidemic and the specific dangers for women;

— to provide motivation and support for women who want to quit;

— to counteract the effects of inaccurate information and advertising.

Several factors should be considered when using different forms of media, such as the characteristics of the target audience (including the level of literacy), accessibility of information, geographical location and cultural background. Each of the media has its own specific characteristics, which should be understood and exploited. The messages should use positive language to describe the desired behaviour and to counteract the messages communicated through tobacco advertising.

Radio and television: can reach large audiences, especially through programmes popular with women; can provide examples and promote non-smoking as a healthy and attractive life-style; and can reach illiterate populations.

Newspapers and magazines: information on the effects of tobacco consumption and different ways of quitting should be included in women's magazines and journals which, through careful selection, can be used to reach women from different age groups and different social and cultural backgrounds.

Posters, billboards, and pamphlets: can provide visual examples and information to support non-smoking; can be used to reach specific target groups such as pregnant women, adolescents, etc.

Cinema: short films on non-smoking could be run before the main feature, but the first priority is to reduce or eliminate the portrayal of smoking in the films produced, a comment which also applies to television productions.

Puppet shows and presentations: these have proved successful, particularly in rural areas and villages, as they are entertaining and direct.

Promoting a tobacco-free image

In countries where the socially accepted image for a woman is already that of a non-smoker or a non-chewer of tobacco, the issue will be to maintain this attitude as these societies pass

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

through phases of female emancipation and economic development. In other countries, ways should be found to promote this healthy image, emphasizing positive aspects such as attractiveness, glamour and liberation and to make non-smoking look healthy, socially attractive and emancipated. In addition, women should be made aware of the special health risks related to reproduction.

- A national media campaign aimed at young women and using television, cinema and women's magazines has been developed in Australia. One of the main themes is that you do not need to smoke to enjoy yourself.

Restrictions on the availability of tobacco

Legislation restricting the availability of tobacco can be an effective instrument to reduce smoking, particularly if accompanied by appropriate health education. For a number of years, WHO has been promoting several measures to control smoking, some of which may be more effective for women.

Control of advertising and sales promotion

The influence of tobacco advertising and other sales promotions on women has been described in Chapter 4. Legislation restricting or prohibiting media advertising (television, radio, cinema, poster and press), distribution of free samples, sponsorship of sports and cultural events, special discount schemes, as well as other direct and indirect advertising strategies, can greatly reduce the desire of women to smoke.

Taxation

Price increases can help reduce tobacco sales, especially among young people and women, who often have little personal income to spend on themselves. Studies in a number of developing countries have found that, on average, a 1% increase in the real price of cigarettes leads to a 0.5% decrease in consumption among adults and even more among young people; the reduction may be even greater in developing countries. However, there are valid reasons for careful consideration of every proposed increase in tobacco duty. For those on low incomes, unable to reduce their consumption, a price increase can simply create a downward spiral: as the burden of financial pressure gets heavier, the need to smoke increases with further detrimental consequences to health as the quality of life deteriorates. One way of solving this dilemma is for governments to create ways in which increased tax revenues

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could be invested in health promotion activities, as occurs in Australia, Finland, Iceland and the United States (California). Increased welfare benefits to offset the adverse effects of price increases could also be provided.

Sales restrictions

Sales restrictions, if properly enforced and ideally preceded by health education, may have some influence on the consumption of tobacco by young girls.

A number of measures can be taken to control the illegal sale of tobacco to minors:

- a minimum age (18–21 years) should be adopted for the sale of tobacco;
- fines for selling tobacco to minors should be increased;
- tobacco access laws should be rigorously enforced;
- vendors should be required to make it clear (through warning signs in the stores) that tobacco will not be sold to minors;
- cigarette-vending machines should be eliminated;
- national campaigns should be launched regularly to inform parents, health professionals and other community organizations about the problem.

- A study in California, USA, showed that an education campaign involving the community and vendors, combined with a broad-based media campaign, reduced tobacco sales to minors. Following a six-month campaign, the over-the-counter sales of cigarettes were reduced from 74% to 39%, although sales from vending machines were not reduced (*59*).

Health warnings

It is imperative that the specific risks of smoking to women should always be included in health warnings on cigarette packets and advertisements, as is the case now in numerous countries, such as Canada, Iceland and Sweden. Since 1970, WHO has recommended that cigarette packets should carry health warnings in order to inform smokers about the dangers of smoking; these warnings must be accurate and comprehensible to the public, they should be changed regularly to ensure that smokers do not become accustomed to the same message and they should be clearly visible.

Other measures

Information about the potentially hazardous constituents of

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

tobacco on cigarette packets and restrictions on smoking in public places and in the workplace deter both women and men from smoking. Several studies have found that restrictions on smoking in the workplace lead to an overall reduction in consumption among smokers which is not made up for by increased smoking outside work. However, women in certain occupations may be exposed more specifically to environmental tobacco smoke, e.g. flight attendants and waitresses.

New forms of tobacco products should be banned to stop the tobacco industry's move to interest young non-smokers in different products.

Cessation of tobacco use

Until recently, most of the studies on quitting reported in the literature concentrated on developed countries, where tobacco use was already widespread. There have, however, been a number of successful cessation programmes in the Indian subcontinent. As tobacco use is now becoming more popular among women in developing countries, the issue is becoming increasingly important there.

The vast majority of people who stop smoking (up to 90%) do so on their own, after being influenced by a number of factors. However, smoking among women cannot be dissociated from personal, social and economic factors, which are all interrelated.

Many women want to give up smoking for a number of reasons, such as: freedom from dependence on tobacco, health, pregnancy and financial worries. However, once women start smoking, they may find it more difficult to quit than men because of a lack of social support, more reliance on cigarettes to cope with stress and anxiety, and fear of weight gain. In order to give up smoking, women need help and support to overcome the short-term physiological withdrawal symptoms that may occur when smoking is discontinued and to break behavioural patterns that may have developed over many years. They may need to talk to others and get their advice and opinions before changing their behaviour or dealing with problems in general. Hence, when designing cessation programmes, all these aspects need to be taken into account.

Some reports from organized cessation programmes have indicated that women are less successful than men in quitting. Since women in Australia, the United Kingdom and the United States are now giving up smoking at about the same rate as men, this conclusion would seem to be incorrect; however, these figures do not show the relative success of women and men in maintaining

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their non-smoking. The differences in cessation rates between different groups of women are, however, indisputable. Disadvantaged women who live in particularly difficult circumstances are less likely to give up smoking than better-off middle-class women.

Although many women manage to refrain from smoking for a long time, they may relapse in situations involving negative emotions, such as conflicts, stress or loss. Men, however, tend to relapse in positive situations, such as at social events. Women are less likely to relapse if they have social support, especially from friends, family and partners.

The benefits of smoking cessation

The 1990 report of the US Surgeon-General (*60*) is dedicated to the health benefits of smoking cessation; its major conclusions, applying both to women and men, are summarized below:

- Smoking cessation has major and immediate health benefits for women and men of all ages. These benefits apply to people with and without smoking-related diseases.
- Ex-smokers live longer than continuing smokers. For example, women who quit smoking before the age of 50 have half the risk of dying in the next 15 years compared with those who continue to smoke.
- Smoking cessation decreases the risk of lung cancer, other cancers, myocardial infarction, stroke, and chronic obstructive pulmonary disease; however, smoking cessation has more immediate effects on cardiovascular diseases than on lung cancer or chronic obstructive pulmonary disease.
- The health benefits of smoking cessation far exceed any risks from the average weight gain (2.3 kg) or any adverse psychological effects that may follow quitting.
- Women who stop smoking before pregnancy or during the first 3–4 months of pregnancy reduce their risk of having a low-birth-weight baby relative to that of women who are non-smokers: however, evidence from two intervention trials suggests that reducing daily cigarette consumption without quitting has little or no effect on birth weight.

In addition, the report underlines some specific advantages for pregnant women: those who stop smoking at any time up to the 30th week of gestation have infants with a higher birth weight than do women who smoke throughout pregnancy. Recent estimates of the prevalence of smoking during pregnancy, combined

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

with an estimate of the relative risk of low birth weight in smokers, suggest that 17–26% of low-birth-weight births could be prevented by eliminating smoking during pregnancy. In groups with a high prevalence of smoking (e.g. women with less than a high school education), this figure could be as high as 29–42%.

- In the United States, approximately 30% of women who are cigarette smokers quit when they become pregnant, with greater proportions quitting among married women and especially among women with higher levels of educational attainment (*60*).

In societies where being thin is considered aesthetically desirable, the fear of putting on weight has discouraged many women from trying to give up smoking and has precipitated relapse among many of those who had given up. An investigation concluded that the average weight gain after smoking cessation (2.3 kg) posed a minimal health risk. Approximately 80% of smokers who quit gain weight and women gain more weight than men. However, the average weight of smokers after cessation is no greater than the weight of non-smokers. This strongly suggests that nicotine causes artificial and reversible weight loss, which is greater in women than men. Nevertheless, there is tremendous individual variation in the metabolic response to smoking and smoking cessation.

Quitting techniques

Stopping smoking and tobacco consumption requires an awareness of the reasons for smoking or chewing tobacco, and development of other ways of coping with the needs. Cessation programmes must consider gender differences in terms of the specific health effects of smoking, and the different needs that women may have.

Although specific techniques can be beneficial, education is needed to increase women's motivation to quit. Women who smoke need to be informed about the physical and psychological reactions involved in giving up. Girls and women who smoke should be made aware of the positive consequences of quitting: an improved economic situation, an improved sense of smell and taste, more stamina, a feeling of achievement, freedom from dependence, more control over their life, and better health. Most important of all is the knowledge that it is possible to become a non-smoker.

Quitting independently

There are many ways in which women quit on their own; these have been popularized in various booklets and pamphlets

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produced as guides for the general public by governmental or non-governmental organizations involved in tobacco control. Quitting independently does not mean women are giving up smoking without help, as their decision may often be the result of information and education campaigns and other forms of assistance. For example, the World No-Tobacco Days serve, once a year, to publicize the ill-effects of tobacco consumption and encourage tobacco users to stop for one day in the hope that they will continue to abstain.

General techniques

The craving for tobacco is maintained by pharmacological, social, and psychological determinants, all of which need to be considered in breaking nicotine dependence.

A number of techniques are available for both women and men. Tobacco dependence can be broken in several ways:

Pharmacological treatments: e.g. nicotine replacement strategies, in which the smoker is given an alternative substance which provides temporary relief from the signs and symptoms of tobacco withdrawal; and nonspecific pharmacotherapy, in which the patient is treated symptomatically. However, specific guidance needs to be given to pregnant women.

Behavioural treatments: e.g. aversive strategies to cigarette smoke (distaste, disgust, fear or displeasure); relaxation training; "contingency contracting" (a system of reward/punishment); social support; training in problem-solving skills; stimulus control (eliminating situations in which the person is likely to smoke); programmes including a number of these strategies and support groups.

Other treatments: e.g. hypnosis and acupuncture.

Specific approaches for women

While all the above-mentioned approaches may be valid for women as well as for men, a growing number of smoking cessation programmes cater specifically for women's needs. They usually include basic health education; discussion of withdrawal symptoms; strategies to maintain non-smoking and prevent relapse; continuing group support; stress management; and advice on weight management, nutrition, fitness and exercise. However, approaches stressing freedom and control over one's life may be

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unrealistic for women who suffer from poverty, violence, stress and discrimination, as other aspects of their lives will need to be changed as well (see p. 88).

Some specific tips to help women give up smoking are given below.

Quitting tips for women

- If you smoke to distance yourself from others who depend on you (children, elderly relatives, partners, friends, etc.), try to find another way of doing this.
- If you smoke to control your emotions, experiment with other methods of releasing your feelings: e.g. writing down your thoughts, discussing issues with the people in your life, meditation or exercise.
- Try to enlist support for quitting smoking from your partner, family and friends, particularly during the first few weeks as you break your dependence on nicotine.
- Get someone to look after your children, or to relieve you of other responsibilities, even for a few hours, as you begin to learn to live without tobacco.
- Plan what you will eat and drink when you decide to quit, as opposed to concentrating on what you cannot eat. This way, you can control your food intake, and control your weight.
- Consider giving up alcohol and coffee for the first month or so, as these often serve as "triggers" for social smoking.
- Change your daily routine for a while to avoid the situations where you would normally smoke, and incorporate exercise into your life instead of smoking. This will not only make you feel better, but will prevent some weight gain as well.
- Make your immediate environment smoke-free, and remove all cigarettes and other tobacco products from your home. Ask others not to smoke in your presence during the first few weeks of quitting.
- If you relapse, and have a cigarette, do not lose confidence in your ability to quit. Consider it a learning experience, and remain committed to stopping smoking.

It has been found that women-only cessation programmes allow better dissemination of women-specific messages. These specific programmes should have a comprehensive, process-oriented approach, with the following characteristics:

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Accessibility: the messages should be appropriate for all women (e.g. using tapes, films, braille, sign language, non-printed materials, etc.). Programmes must be sensitive to factors such as race, ethnicity, culture, age, and socioeconomic status.

Comprehensiveness: issues cannot be restricted to smoking behaviour only but must be placed within the context of women's experiences.

Skill-building: skills in assertiveness, identifying external and internal motivations, resisting pressure, stress management and positive health behaviour must be developed.

Support: social support, respect, acceptance and trust are most important.

- In Canada, several woman-specific cessation programmes have shown some successes. They minimize the importance of cessation and examine the woman's smoking behaviour within the context of her overall life-style. Efforts are made to identify social and political influences on smoking behaviour, as well as to increase women's understanding of why they smoke (*61*). The women who are most successful in quitting are those who are ready to make changes in their lives: thus, part of the programme is to encourage women to learn to take control of their health and life (*12*).

As most smokers who give up smoking go through a process that involves contemplation of change, action, maintenance and relapse, cessation programmes must address all stages of the process. Relapse is often perceived as a failure, but in fact is part of the learning process of cessation. Repeated relapse is to be expected in smokers who are heavily dependent on tobacco and they therefore need to be encouraged to continue trying until they succeed.

Relieving social pressure

Individual programmes should be backed up by measures aimed at changing the social and environmental factors that make giving up easier and cater for the needs of non-smokers. This would include actions as diverse as economic development or changes in the social environment, as well as increased provision of smoke-free environments and action to increase awareness of the effects of passive smoking.

Smokers who quit with support from their family and friends are more likely to maintain their non-smoking behaviour. Therefore, family members and work colleagues can be given practical

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suggestions to help and support the participant as she becomes a non-smoker.

If women in difficult circumstances are to be helped to take control of their lives, it is necessary to adopt strategies that address not only their smoking but also the social and economic circumstances that maintain their dependence on tobacco (such as violence against women, unequal pay, etc.). Accordingly, cessation programmes for these women must be accompanied by policies and actions to reduce inequalities.

Role of health professionals

In tobacco consumption, prevention and cessation, some groups of individuals may have an exemplary role to play (see Chapter 4, p. 72). Health professionals, such as nurses, midwives, physicians, nutritionists and others, may have a particular influence on tobacco use by girls and women. This highlights the importance of specific training in this field and the need for their awareness of their part as role models for patients. Furthermore, health workers who are non-smokers are more likely to give advice about the hazards of smoking to their patients and help them quit.

Family physicians are generally in a good position to give advice and can have a positive influence. Although most physicians believe that it is their responsibility to encourage smokers to give up smoking, many do not do so routinely.

- In the United States, population surveys show that most adult smokers have never been advised to quit smoking by a physician. According to previous studies, physicians who are cigarette smokers are less likely to give advice on smoking than are those who are non-smokers. They are also more pessimistic concerning their patients quitting. Although physicians seem to advise those thought to be at risk and those who are already motivated (*62*), studies have shown that advice to quit smoking by a physician is mainly effective with light smokers (*63*).

Too often medical practitioners assume that their women patients are already aware of the risks associated with smoking and do not attempt to influence their attitudes and behaviour when issues related to health and life-style are addressed in medical consultations.

- For example, a Swedish study showed that smoking was discussed in 75% of medical consultations and alcohol consumption in 30%. Whereas all men were questioned about their smoking, only half of the women were. The results also showed that the information exchanged was superficial and did not give a full picture of the patients' behaviour, except in a few cases (*64*).

However, some doctors, such as gynaecologists and obstetricians, may have more influence on women, because of their close

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relationship with the patient and their frequent contact during certain important periods of her life. Women are often highly receptive to anti-smoking education during these consultations. Prenatal care provides a good opportunity to educate women on the hazards of smoking, helping them to take control of their health and the health of their babies. More generally obstetricians and gynaecologists can advise their women patients to give up smoking when they deal with obstetric care, family planning and pregnancy, and can display and make available literature on tobacco control. Care should be taken that the approach adopted does not "blame the victim".

Paediatricians can advise parents to stop smoking when they bring in their children for consultations. The best times to talk to parents about quitting are during check-ups and visits for respiratory problems. Paediatricians may be faced with additional obstacles; for example, parents may not expect advice and may not react favourably; advice to stop smoking may not seem appropriate, especially if the child does not appear to be ill or affected by smoking.

Reasons why doctors in general fail to give advice on quitting have been identified in developed countries as: belief that it is not worth while and that the patient does not want to give up smoking; a tendency to counsel those with tobacco-related conditions, rather than light or average smokers; past failures, when advice was not followed; a feeling that providing advice is not their role; lack of confidence; feeling inadequately prepared to help; wishing to avoid embarrassing or offending the patient or discouraging her from coming back; lack of time or payment; and being unaware that simple advice can be effective. Furthermore, in developing countries, information on quitting may not be readily available.

Nurses can also encourage women to refrain from tobacco consumption, not only because nursing is still a predominantly female profession, but mainly because nurses are often in a position to give public health advice and to have contact with girls and women. To do so effectively, in many countries, the nursing profession should first address the question of nurses' own smoking.

As women may gain weight when they quit smoking, nutritionists and dieticians can provide advice on post-cessation weight management and diet as well as general advice on fitness and exercise.

Dental hygienists have a traditional role in terms of health education, where the need for good oral hygiene practices can lead to advice against tobacco consumption. The hygienist can also ask his or her patients about their use of smokeless tobacco, teach

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them techniques for oral self-examination, detect signs of oral lesions due to smokeless tobacco products, and discourage patients from using these products.

It is evident, therefore, that health services should be tobacco-free. Smoking or use of other forms of tobacco should not be permitted in hospitals, health centres, screening facilities, ambulances, primary health care centres, pharmacies or opticians' offices, etc.

- A smoking control policy implemented in a hospital in Barcelona, Spain, over a 3-year period resulted in a reduction in smoking among hospital staff and a greater awareness of the exemplary role health professionals can have. This indicates that carefully designed programmes can be successful even in countries with high rates of smoking (*65*).

Halting the epidemic

Special education and cessation programmes aimed at adolescents and women have been developed in a few countries with a certain amount of success. Research needs to be carried out on an ad hoc basis to investigate which components of these programmes can be transferred to different countries and which must be modified to fit different cultures and socioeconomic backgrounds. A key to the success of these efforts is the evaluation of education programmes; in particular, school-based tobacco control education programmes need to be evaluated for their effects on girls. This will facilitate the design of corresponding tobacco control methods appropriate for girls, in various educational settings.

Programmes must also address the problem of how to reach girls and women in other settings, e.g. girls who do not attend school, women in the workplace, community centres, etc. Smoking behaviour may be easier to change with specific life events, such as marriage, pregnancy, birth of a child, divorce, change of job, etc. Are these opportunities systematically exploited in tobacco control campaigns aimed at women? Where resources are very scarce, methods should also be developed to identify high-risk groups (e.g. adolescents, young women intending to start a family, or women in certain occupations), which should be targeted for a more focused planning of smoking prevention, education and treatment.

Simultaneously, decision-makers and women themselves need to be made aware that the issue is crucial and that something can be done about it.

An important measure is the appropriate and timely training of teachers and health personnel in the prevention of tobacco use and in cessation. This cannot be done on an ad hoc basis. The ap-

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propriate skills will need to be taught through formal training included in the basic and post-basic curricula. Tobacco consumption by women is a growing problem and deserves to be treated as such in medical and public health training. Sections 6 and 7 of the attached country profile (Annex 1) can be used to monitor the actions taken at the country level to halt the epidemic.

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Chapter 6

Women against tobacco: a strategy for individual, community, national and international action

The previous chapters have shown the need for urgent action to prevent the prevalence of smoking among women in developing countries from reaching the peaks that have been observed in developed countries. The previous chapters have also identified the information required to facilitate appropriate action to combat the epidemic. The tasks for all the strategists concerned are now well defined with a key role to be played by governments at all levels strengthened by international organizations, in particular WHO, nongovernmental organizations and others. These strategists will need a range of tools, including financial resources, to make them as efficient and effective as possible.

A worldwide strategy

As men in developed countries were the first to smoke in large numbers, not surprisingly researchers and policy makers first looked at these male populations to explore and, later, to counteract the effects of smoking. The previous chapters have shown the consequent imbalance in our knowledge of the smoking epidemic. These chapters have attempted to paint a picture, as yet unfinished, of the use of tobacco among women throughout the world, showing the differences between the situation in most developed countries where women smoke nearly as much as men, and the situation in developing countries where the prevalence of smoking among women is generally still low.

In view of the current situation, some universally valid actions need to be taken immediately, such as the enactment of legislation comprising all necessary measures to discourage women from using tobacco, including the provision of smoke-free places and bans on tobacco advertising. In addition, actions will have

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to be adapted to the specific circumstances in each country — on the one hand preventing the uptake of smoking and on the other helping smokers to quit.

A number of specific recommendations have been made at the end of each of the previous chapters; in addition, a strategy for preventing the morbidity and mortality from tobacco-related diseases in women from reaching the levels observed in men needs to be designed and applied immediately in all countries, which takes into account their different sociocultural and economic backgrounds.

This common strategy will have the following ruling objectives:

- to ensure that the "tobacco or health" situation for women is widely recognized and understood (see p. 98);
- to ensure that national control programmes are developed that contain all the measures recommended in this monograph;
- to ensure that legislation is adopted which comprises all the necessary measures to discourage women from using tobacco (such as a ban on tobacco advertising and on all other forms of promotion);
- to ensure that within the framework of national tobacco or health coordinating committees, each country secures the presence of a focal point dealing with women and tobacco;
- to ensure that school health education comprises the necessary specific tobacco control measures for girls and that public education campaigns are properly targeted at women;
- to take measures to encourage all media to provide appropriate information on tobacco or health to women of all ages;
- to take measures to empower women at all political and technical levels to develop the necessary advocatory and scientific skills to monitor and control the tobacco epidemic in women;
- to address the social and economic factors that could discourage the use of tobacco by women.

Implementing this strategy will require a strengthening of all the sectors involved to enable them to coordinate their efforts at the international, national and community levels; it will also improve knowledge of the current situation and the various tools for tobacco control.

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Identify and strengthen the strategists

At the local, national and international levels, smoking control policies, legislation and activities are usually aimed at smokers *per se*, and the failure to take action or adopt different approaches for men and women has often been to the disadvantage of women. To redress the balance, further action needs to be taken to control tobacco use among women. To do this, the strategists concerned will need greater support. There is also a growing recognition that more of the strategists should be women.

A large number of governments and governmental organizations throughout the world have already taken effective action in tobacco control, whether by enacting legislation or adopting other measures such as supporting health education. The protection and promotion of healthy life-styles, an essential part of the health policy of certain countries, also contribute to controlling the use of tobacco. National health strategies for the prevention and control of certain diseases, such as cancer and cardiovascular disease, have usually included a strong tobacco control component and offered most of the opportunities for tobacco control. Through the establishment of health policies, governments may have the key role in controlling the tobacco epidemic in women; however, they will often need a grouping of forces behind them to motivate their action, to support it and to participate in its implementation.

The nongovernmental organizations involved in tobacco control strategies have played an important role worldwide in influencing the passing of legislation, health education and the dissemination of information. Major national and international nongovernmental organizations concerned with tobacco control should dedicate part of their programmes for the specific benefit of women.

Nongovernmental organizations dealing with women's issues have often taken little part in tobacco control efforts at global, national or community levels; although this situation is slowly changing, the mobilization of the women's movement (and women's health movement) in tobacco control also needs to be encouraged.

Community groups that can have an influence on tobacco use among women, such as parent-teacher associations, community development associations and sports organizations, should be encouraged to address the issue as a priority. The challenge involves convincing community groups not currently involved in tobacco control to apply resources to the issue of smoking and women. Of prime interest are community groups concerned with women's health or with related issues, such as occupational health and safety or environmental matters, and associations and

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organizations concerned with particular target groups such as battered women or ethnic minorities, and particular occupational associations.

Specific community actions need to be documented and the results widely circulated. Even strong governmental action through legislation or health education will have less effect if the immediate social environment of the female smoker's workplace or community is not also conducive to quitting. Community projects should incorporate educational approaches that develop women's self-esteem and independence, and help to eliminate their need for tobacco. Attention should be given to the development and evaluation of effective weight control programmes for women who give up smoking and to their application at the community level. Public information programmes should emphasize the rights of non-smokers, especially children and pregnant women.

Occupational health programmes in factories or other places of work can be a good entry point for action and could include information on the hazards of tobacco consumption and skills-training on how to live without tobacco. The presence of health and safety committees in workplaces could facilitate the implementation of such programmes.

Specific mention should be made of the health professionals. Action by physicians, nurses and other primary health care workers has been shown to play a positive role in promoting better health for women through modification of a variety of behavioural risk factors. Such workers could be instrumental in promoting health for women by influencing their patients' behaviour and providing information. In creating a tobacco-free society, the leadership of health professionals should be mobilized through their various professional bodies and by approaching them individually; specific training should be envisaged to this effect.

The challenges facing the development of a broader-based community response to the issue of smoking among women are considerable; however, experience with raising awareness of other social and environmental issues shows that once there is widespread community concern over an issue, accelerated positive change will occur. Cooperation between all those concerned will strengthen activities by creating massive support as well as maximizing the use of limited resources.

Leaders are essential to trigger action by all the above strategists. These leaders can come from all professions: e.g. lawyers, politicians or technical specialists.

Since 1974, several WHO Expert Committees (*66*, *67*, *68*) and the WHO Study Group on Smokeless Tobacco Control (*69*)

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have made a number of recommendations for national and international action to attain, in individual countries, societies where the social norm is to abstain from tobacco consumption. Several of these recommendations specifically target national action in favour of women such as:

- recognition of the gender difference in dealing with the issue of tobacco use among women.
- legislation banning the promotion and advertising of all tobacco products; revision of legislation regarding the sale of tobacco to minors to include stiffer penalties; development of public awareness programmes among retailers to inform them of legislation regarding sales to minors; and legislation banning tobacco sales through vending machines, in order to limit accessibility to children.
- pricing policies that maintain the cost of tobacco at a high level.
- determination of the special factors influencing women to consume tobacco and health education (from primary school onwards) based on these factors; public information campaigns based on pretested strategies aimed at the specific factors in each national setting that are characteristic of female smokers.

Since 1980, World Health Assembly resolutions have mentioned the need to consider the particular health issues related to women's use of tobacco; two resolutions deserve particular attention. Resolutions WHA39.14 and WHA43.16, respectively, urge Member States to implement a nine-point smoking control strategy and to promote legislation for "progressive restrictions and concerted actions to eliminate eventually all direct and indirect advertising, promotion and sponsorship concerning tobacco".

WHO's essential role is to support the development of national tobacco control programmes at the request of its Member States. It has also developed strategies for joint action between Member States, an example of which is the European Action Plan on Tobacco for a Smoke-free Europe. The process was started at the First European Conference on Tobacco Policy in 1988, where the continent's foremost experts issued a charter against tobacco and outlined ten strategies for a smoke-free Europe. The basic principles of the charter are: that air free from tobacco smoke is an integral part of the individual's right to a healthy and unpolluted environment; that young people should be free to grow up without being subjected to undue pressure to take up smoking; that those willing to give up smoking should receive help; and that

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all citizens have a right to be informed of the health risks associated with smoking.

To contribute to the achievement of the worldwide objectives, WHO will, within this framework:

— ensure that data on tobacco use and related problems collected in its data centre/clearinghouse give equal coverage to women and men;

— promote and encourage and, whenever possible, support studies aimed at improving knowledge about women and smoking issues;

— ensure that its educational and public information material gives an equal emphasis to women and men.

WHO has endeavoured to sensitize the United Nations system to the harmful effects of tobacco use and obtain its support in dealing with the health, social and economic problems caused by tobacco consumption, and substantial progress has already been made in making organizations of the United Nations system tobacco-free. WHO now aims to ensure that there is a consensus on an international strategy for the whole United Nations system to disseminate information to increase awareness of the health risks of smoking, to help women avoid taking up smoking despite the influence of advertising, and to help them to quit.

The scientific integrity of WHO, its coordinating capacity, technical resources and capacity to stimulate the acquisition of new knowledge make WHO a prime mover in strengthening all strategists. It is no coincidence that some of the successes in the passing of legislation, the winning of court cases and the lowering of tobacco consumption are a result of the combined action of governments and nongovernmental organizations supported, either directly or indirectly, by WHO. Conversely, requests from governments to WHO for technical cooperation are more likely to come as a result of campaigns organized by nongovernmental organizations.

Improve knowledge

In monitoring and controlling the tobacco epidemic among women, further qualitative and quantitative research studies are important in order to identify the directions in which action should be taken. As more becomes known, new avenues will probably open for research to refine knowledge and make actions more specific and effective.

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Patterns and trends of smoking among women are well documented in only a small number of highly developed countries; few developing countries have comprehensive data on the subject. A first step will be to ensure that, in countries with a well developed system of health information and statistics, data on smoking patterns and trends for women are collected and kept up to date, together with data on tobacco-related diseases. In other countries, including a large number of developing countries, rapid assessment or small-scale surveys should be carried out at regular intervals on representative samples of the population. If the expertise is not available locally or the subject is not considered a priority, the possibility of obtaining information through other health surveys should be investigated. In all cases, scientific accuracy should be emphasized, together with the necessity to collect sex-specific data. The twinning of programmes to evaluate tobacco use between developed and developing countries should be encouraged as a means of technology transfer.

Improving knowledge also means ensuring that the results of studies are comprehensible to all those who will have to take action; these data should be published and widely disseminated. As a minimum, information on the prevalence of tobacco use (percentage of women who are regular smokers or regular users of other forms of tobacco) by age group is required. The importance of age-specific information should not be underestimated. In most countries, the prevalence of cigarette smoking is significantly higher among younger women, which has important implications for prevention. Data on cigarette consumption (number of cigarettes per day), duration of exposure (age of initiation and length of time since taking up smoking), cessation rates and average tar and nicotine content of cigarettes consumed should also be obtained if possible. In countries where tobacco chewing is common among women, the prevalence of chewing and the daily consumption should also be ascertained.

There is sufficient evidence on the harmful effects of smoking to justify concerted action in all countries. While the added risks for women have also been well documented in some countries, complementary surveys could clarify the cumulative effects of ill health and poor nutrition with tobacco consumption in women in individual developing countries or in underprivileged women in other countries. Thus, further epidemiological studies are needed to improve knowledge of the health risks for women, based on samples of populations at different levels of development. Further studies are also needed to evaluate more precisely the risks of passive smoking for women, especially during pregnancy. Local and national health studies can also be effectively used to publicize the harmful effects of tobacco consumption.

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Smoking and use of other forms of tobacco by women need to be understood within the context of social, cultural and behavioural influences in different populations and in different strata of the various populations. While there has recently been an increase in qualitative research on women and smoking, especially in countries where the tobacco epidemic is already affecting women, smoking as a functional behaviour needs to be analysed in relation to occupation and life circumstances, to understand why women start and continue to smoke. For example, smoking behaviours of various ethnic minorities in Canada and New Zealand have been well documented; however, little is known on the subject for most of Asia or for the general population in Africa. Similar studies will be needed to determine whether the tendency is for more girls than boys to take up smoking as countries become more economically developed.

The role of smoking in women's daily lives in developed and developing countries needs to be more fully examined, in particular regarding maintenance of smoking behaviour. Better understanding of smoking patterns among the socially disadvantaged (women on low incomes, unemployed women, battered women, women belonging to minority groups) should facilitate research into alternative coping methods appropriate to different life circumstances, and control within the working environment. It is also important to understand motivation to smoke at an individual level, as well as the links between women's experiences and smoking.

Behavioural research could also cast new light on the initiation of smoking in young people. In developing countries where the prevalence of smoking among women is still very low, the factors responsible for this situation should be carefully studied with a view to maintaining it as these societies go through phases of female emancipation and economic development. The stabilizing factors for young people and adolescents should also be assessed in various sociocultural backgrounds and educational programmes developed to help parents influence their children (primary school age) and to promote the influence of leaders and role models on adolescents.

While legislation against tobacco advertising and other forms of promotion is a priority, in countries where such laws have not yet been passed, research is needed on cost-effective methods to counter tobacco advertising and to develop effective messages to promote prevention and cessation. Such studies will increase the recognition of the importance of gender differences in the physiology and social psychology of smoking, as well as more fully reflect women's own experiences and interpretations of their smoking behaviour in dealing with prevention and cessation..

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In view of the urgency with which tobacco control programmes need to be implemented in developing countries, in a way and at a cost they can afford, studies are required on the cost-effectiveness of various interventions to promote non-smoking, with emphasis on mass media approaches and methods to counter tobacco advertising.

Throughout the world, the effects of national tobacco control policies on smoking trends among women need to be analysed. Case-studies of activities to promote non-smoking and of tobacco control policy interventions from process and managerial points of view, would facilitate the further development of specific action for women.

However, the need for further studies and research should not delay the implementation of available strategies to control tobacco use among women.

Provide the tools

Methods, materials, validated information and training are all essential for tobacco control activities and require both financial and human resources. Compared with the resources deployed by the tobacco industry for the marketing of its products, the financial resources available for tobacco control are minute, hence the need to select carefully the tools to be used, preferably those that have several effects.

It has often proved difficult to find resources to implement tobacco control strategies, thus part of the role of the various strategists will be to mobilize resources or find alternative approaches. Such alternatives could include using censuses or other health surveys to gather the data required; twinning tobacco control programmes between countries with large resources and others with more meagre ones; forming coalitions and networking; using all those in positions of influence, from ministries to the media, for promotion and advocacy; and appropriating a certain percentage of tax revenue from tobacco products for health programmes aimed at women.

Political figures, especially women, in decision-making positions who have some interest in the subject are also an important resource, as are lobbyists for tobacco control.

Universities should be encouraged to undertake research and training on women and tobacco as part of their regular activities and to validate and publish information on women and tobacco.

Worldwide interest in tobacco control is leading to effective cooperation and alliance-building. Tobacco control among women

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is greatly enhanced by the formation of coalitions and networks that permit communication and coordinated action. Coordination encourages sharing of information and strategies, permits efficient use of financial and personal resources, and eases the isolation often felt by individuals working in this area. Perhaps most importantly, these organizations greatly enhance the power of individuals to bring about changes.

Networks dedicated to the issue of women's use of tobacco are proliferating around the world. On an international level, the International Network of Women Against Tobacco (INWAT) was founded in 1990. INWAT's goals are to counter the targeted marketing and promotion of tobacco to women and girls, and to encourage the development of women-centred tobacco prevention and cessation programmes. INWAT's activities include the following:

— maintaining an international database of individuals working to address tobacco control among women;

— producing an international directory of women working in tobacco control;

— producing, collecting and distributing case-studies of efforts to undermine advertising targeted at women and of successful women-centred approaches to smoking prevention and cessation;

— ensuring that the issue of women and smoking has a more prominent place within the tobacco control movement.

Regional networks will also prove valuable, to allow members to focus on local issues and to develop the most appropriate strategies for particular areas. For example, the Association of Latin American Women for Smoking Control (AMALTA) was founded in 1991 to address tobacco use by women in Latin America.

Collecting funds or obtaining financial support for tobacco control has proved to be difficult enough in developed countries. Most developing countries are still struggling with communicable diseases and an acute lack of resources for primary health care. The responsibilities of the more developed countries in the implementation of the worldwide strategy for tobacco control among women need to be stressed. Their role in the transfer and adaptation of information on tobacco use among women and on measures to control it is fundamental; they are also often in a better economic position to participate in this transfer.

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Selected further reading

In addition to the references given on pp. 103–106, the following sources of information may prove useful to readers. While some are of general interest, others are directly related to the subject matter of individual chapters.

General interest

Smoking and its effects on health. Report of a WHO Expert Committee. Geneva, World Health Organization, 1975 (WHO Technical Report Series, No. 568).

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In 1988, the WHO Regional Office for Europe prepared a series of booklets (Smoke-free Europe) for the first European Conference on Tobacco Policy.[1] The booklets, which were pub-

[1] Available on request from the WHO Regional Office for Europe, DK-2100 Copenhagen Ø, Denmark.

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lished in English, French, German, Russian and Spanish, deal with the following areas of interest in the tobacco or health field:

— the physician's role;
— legislative strategies for a smoke-free Europe;
— the evaluation and monitoring of public action on tobacco;
— tobacco or health;
— helping smokers stop;
— planning for a smoke-free generation;
— why people smoked and why they are stopping;
— tobacco advertising and promotion;
— tobacco price and the smoking epidemic.

Since 1979, the US Department of Health and Human Services has issued regular reports by the Surgeon-General on smoking and health; the most relevant are:

The health consequences of smoking for women. A report of the Surgeon-General. Rockville, MD, US Department of Health and Human Services, Public Health Service, Office on Smoking and Health, 1980.

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Annex 1

Survey on tobacco use

The following format has been designed for the systematic collection of information on national tobacco control programmes. It comprises a set of questions for the establishment of a country profile and a set of definitions and notes to assist countries to complete the questionnaire.

Through the use of a standard format, WHO is trying to ensure worldwide compatibility of data. However, it is realized that the availability of information on tobacco use will vary considerably in different countries and hence some degree of flexibility is anticipated. Some countries may have additional information; in other countries, a lack of information regarding some of the questions should not prevent their completing other items of the profile for which information is available.

The name and functions of the persons responsible for collecting the information and for updating it should be mentioned, together with the dates on which the profile or individual data therein was updated.

Summary country profile

1. Tobacco consumption, prevalence and intensity

1.1 Total national consumption in kg:

	1990	1989	1988	1987	1986	1985
All tobacco products combined						
Cigarettes						
Cigars and pipe tobacco						
Other forms (e.g. bidi, hookah and chewing tobacco)						

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

1.2 Are periodic surveys or other assessments conducted of cigarette/tobacco consumption and of smoking prevalence and intensity according to sex, age group and specific population subgroups? (e.g. occupation, urban/rural residence, socio-economic status, geographical subdivisions.)

1.3 If so, for which year(s) during the past decade or so are the data available?

1.4 Are other forms of tobacco use also included in these surveys? If so, please provide details.

1.5 Smoking prevalence and intensity:

	Period 1			Period 2		
	Males	Females	Date	Males	Females	Date
1. Percentage of population aged 15 years and over who are regular smokers						
2. Percentage of population who are regular smokers, by age group:						
— 10–14 years						
— 15–19 years						
— 20–24 years						
— 25–44 years						
— 45–64 years						
— 65 years and over						
3. Smoking prevalence (%) in specific population subgroups (e.g. by occupation, race, ethnicity, socio-economic status, education)						
4. Among regular tobacco users, average consumption per day of:						
— cigarettes						
— cigars or pipe tobacco						
— other tobacco products						
5. Percentage of population who are ex-smokers						

1.6 Please provide the information requested below for the major brands of cigarettes (maximum of 5) sold in your country, together with their respective market shares (if known).

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Brand and type (menthol, filter, etc.)	*Tar* (mg per cigarette)	*Nicotine* (mg per cigarette)	*Filter tip* (Yes or No)	*Market share (%)*	*Year*
a.					
b.					
c.					
d.					
e.					

1.7 Is there any information on the average age at which people begin smoking in your country? If so, what is the proportion of adult smokers who report beginning to smoke during the following ages? (Please provide data for the latest period available.)

Age	*Men (%)*	*Women (%)*	*Both (%)*	*Year of survey*
10 years and under				
11–14 years				
15–19 years				
20 years and over				
Mean age				

2. Mortality and morbidity from tobacco-related diseases

2.1 Mortality rate or number of deaths from various causes:

	Period 1			Period 2		
	Males	Females	Date	Males	Females	Date
Total deaths						
Lung cancer						
Cancer of the larynx						
Cancer of the lip, oral cavity and pharynx						
Other cancers						
Bronchitis and emphysema						
Cardiovascular diseases (stroke, myocardial infarction)						
Acute upper respiratory infections						
All causes						

Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

2.2 Is there high mortality from any other disease which may be associated, partly with smoking and partly with another traditional use of tobacco or endemic disease in your country? (e.g. bladder cancer — schistosomiasis and smoking — or oesophageal cancer — use of alcohol and smoking.) If so, please provide mortality data for the two periods shown in the table above.

2.3 Does your country use these data to regularly assess the mortality attributable to tobacco use? (or smoking?)

2.4 If so, how is your country monitoring the number of deaths attributable to tobacco use? (or smoking?)

2.5 Number of deaths attributable to tobacco use:

	Period 1			Period 2		
	Males	Females	Date	Males	Females	Date
Total						
Lung cancer						
Cancer of the larynx						
Cancer of the lip, oral cavity and pharynx						
Other cancers						
Bronchitis and emphysema						
Cardiovascular diseases						

2.6 Does your country monitor the amount of morbidity caused by tobacco use?

2.7 If so, please provide whatever information is available for the two data periods shown above. These data may be national or regional or refer to a specific locality, e.g. a hospital catchment area. Where possible, information should be shown separately for inpatients and outpatients and for the major tobacco-related diseases.

2.8 Does your country monitor the health care costs and economic losses (e.g. caused by absenteeism) due to tobacco use?

2.9 If so, please provide any available information for the two data periods shown above.

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3. Economics and tobacco

3.1 Please provide comparative figures or estimates for your country for each of the past 10 years (or for the longest and most recent period available) on the following:

- annual tobacco production, import and export;
- annual cigarette production, import and export;
- annual production of other manufactured tobacco goods, import and export.

3.2 Please provide comparative figures or estimates for each of the past 10 years on the annual income/expenses (in local currency) from tobacco production and consumption in your country through:

- monetary value of agricultural production of tobacco;
- monetary value of the manufacture of tobacco products;
- cost of imports of tobacco, cigarettes and other manufactured tobacco products;
- revenue raised by taxation (customs and excise taxes) on tobacco products as a percentage of all taxes;
- income from tobacco exports.

3.3 How is the revenue from tobacco used? Is any part of this revenue used for health-care services, health promotion campaigns, and/or social expenses?

3.4 How many jobs are generated annually as a result of tobacco production and distribution? (Number of people employed in the production, manufacturing and distribution sectors of the tobacco industry.)

3.5 Have any alternative crops been tried? If so, please provide details of the programme and outcome.

3.6 What is the cost of 20 cigarettes and the mean household income per year?

4. Health education

4.1 What are the components of the anti-tobacco health education programmes for schoolchildren in your country? At what age is anti-tobacco education introduced? What form does this school education take? Is it integrated into a global health education curriculum? Has it been evaluated?

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4.2 How is health education on the dangers of tobacco presented in the curricula of health personnel such as doctors and specialists, nurses, dentists, dental hygienists, dieticians and others?

4.3 Are public information programmes (anti-smoking messages) organized systematically or for special occasions (e.g. World No-Tobacco Day) on the following media: television, radio, press, others? Please give examples. How often are they featured?

4.4 Are community anti-smoking activities, including smoking cessation programmes, organized? If so, at what level and for which specific groups? (e.g. women, pregnant women, migrant workers.) Please give examples. How are health personnel involved?

4.5 What is the role of governmental and nongovernmental organizations, respectively, in health education?

4.6 What is the government budget for health education?

4.7 What proportion of this budget is allocated to anti-smoking health education programmes?

5. Legislation and regulation

5.1 What are the laws or regulations that have been adopted in your country to restrict smoking in public places such as public transport, official buildings, schools, etc.? How are these restrictions enforced? In what year did these laws or regulations come into force?

5.2 What are the laws protecting children from tobacco?

- Which laws prohibit the sale of tobacco products to minors?
- Is there is a ban on tobacco-vending machines in your country?
- Is smoking prohibited in schools or other educational institutions?

5.3 Is smoking prohibited in health and health-related premises such as hospitals (public or private), health centres, screening facilities, ambulances, doctors' offices, dental surgeries, etc.? When did these regulations come into force?

5.4 Is there a ban (direct or indirect) on the advertising of tobacco products? Please provide details. To which form of media does this ban apply?

5.5 Is there a ban on the sponsorship of sporting or cultural events by tobacco companies? How is this ban enforced?

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5.6 What are the regulations on the labelling of tobacco/cigarette packets?

- What are the health warnings marked on tobacco packets? Are these health warnings changed regularly? What is the size of these warnings compared with the size of the tobacco packet?
- Is it compulsory to indicate tar and nicotine yields on tobacco packets?
- Is it compulsory to list the additives to the tobacco on the packets?

5.7 Has any other legislative action been taken in your country against tobacco? Are these laws enforced? If so, by whom?

6. Behavioural, cultural and sociological factors

6.1 Have any studies been conducted on the sociological and cultural determinants of smoking in the general population or in specific groups, e.g. young people, women, and minority groups? (Please give details.)

6.2 How is public knowledge about the effects of tobacco use surveyed? How often is it surveyed? What percentage of the population consider smoking to be harmful?

6.3 How is social acceptability of tobacco use evaluated in your country? How often is it evaluated? Is it decreasing?

6.4 What is the general attitude of the public to tobacco regulations? Is it surveyed?

7. General policy and programme matters

7.1 Is there a national focal point, such as a national organization or group of health agencies formally in charge of the tobacco control activities or the coordination of these activities? How is it funded? In which structure (governmental or otherwise) is it located? How many paid staff does it have? Please give address, phone number, etc. of the organizations involved.

7.2 Are there any nongovernmental organizations or special groups addressing the "tobacco or health" issue?

7.3 Does your government have an official policy or programme addressing all (or most) of the above-mentioned points (1.1–6.4)? If so, please provide details and attach relevant documentation. What proportion of total government expenditure is allocated to the implementation of this policy/programme?

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7.4 Have the anti-tobacco measures taken in your country been effective? Please explain how they have been enforced. What results have been obtained?

7.5 Can you give any other information on the effectiveness of the tobacco control policy/strategy/programme being implemented at present in your country?

8. Other related information

For example, future plans, areas of specific interest, etc.

Guidance for the completion of the country profile

1. Tobacco consumption, prevalence and intensity

This section of the questionnaire is concerned with statistical information on tobacco use and tobacco-related disease in your country. Information should be provided on any form of tobacco consumption which you consider to have significant consequences for the health of the population.

The definitions and data format pertaining to this section are those adopted by WHO for collecting information at the international level on tobacco consumption and related diseases. It would be helpful if the data could be provided according to the definitions and format specified; however, any information that is available on these topics would greatly assist WHO in monitoring the tobacco epidemic. If the format and definitions differ from those suggested here, please specify the definitions, ages, population groups, etc. which are relevant for your country in order to assist WHO in interpreting the data.

Question 1.1

This question refers to the annual national consumption of tobacco products (in kg if possible). These estimates are generally derived from trade balance sheets, taking into account data on imports, exports, production and stockpiling of tobacco products. If available, consumption data should be provided according to the major forms of tobacco use as indicated and for as many years as possible.

Data on the prevalence of use of the various tobacco products should also be provided if possible.

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Questions 1.2–1.5

Smoking prevalence is usually defined as the percentage of a particular population being surveyed who are regular smokers (see question 1.5, Item 1, below, for a definition of regular smokers). For monitoring purposes it is extremely important that prevalence be assessed within specific population subgroups, and in particular by age and sex (see Question 1.5). In addition, prevalence should also be assessed by demographic characteristics such as occupation (or some other indicator of socioeconomic status) and place of residence.

Surveys may be national surveys of prevalence or they may be less comprehensive (e.g. urban residents or certain localities) with known sampling biases (e.g. poorer segments of the population may have been excluded). The nature of the survey should be specified. If possible, nationally representative survey data should be reported.

Survey or census data on prevalence of tobacco use may refer to a single calendar year or several years. It should be specified when the data were collected. If prevalence data are not available for the 1980s, information for the latest year(s) available should be provided.

Question 1.5

The purpose of this table is to provide information on tobacco use, now and at some earlier period. Ideally, the two periods should be about 10 years apart, although you may wish to provide data for a shorter or longer period, depending on availability and relevance to the assessment of programme effectiveness.

Period 1 should be used for the latest available data. The data need not necessarily be confined to a single calendar year, but may include 2, 3 or even 5 years. Furthermore, the data for each item under Period 1 may not be available for the same calendar year(s). For example, data on regular smokers aged 15 and over may be available for 1990, but detailed age-specific data may only be available for 1988. In this case, please specify the reference year(s) for each item in the column provided.

Period 2 should be used for data referring to a period about 10 years earlier than Period 1. Data should be shown for as many items as possible, even if the calendar year(s) are not the same for each item. Please specify the reference year(s) where necessary.

Item 1. A *regular smoker* is someone who, at the time of the survey, smokes some kind of tobacco product every day and has done so for the last 6 months or more. A comparable definition may be used for other forms of tobacco use (e.g. chewing

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tobacco). The definition does not include *occasional smokers* (i.e. anyone who smokes, but less than once a day). However, if your definition of regular smoker includes occasional smokers, please indicate this on the questionnaire.

If prevalence data are not available for the population aged 15 years and over, please provide any data that are available and indicate accordingly.

Item 2. If prevalence data are not available for the age groups indicated, please provide data for whatever age groups are available.

Item 3. Prevalence data may be available for certain population subgroups, according to occupation, socioeconomic status (however defined), urban/rural residence, administrative divisions (e.g. states/provinces), etc. A maximum of five subgroups should be selected.

Item 4. For those who are reported to be regular tobacco users, data is required on their average daily consumption of tobacco products, including:

— manufactured cigarettes;
— hand-rolled cigarettes;
— bidis;
— pipefuls of tobacco;
— cigars;
— pinches of snuff;
— quids of chewing tobacco, etc.

If consumption data are not available in this format, please provide them in whatever format is available.

2. Mortality and morbidity from tobacco-related diseases

In view of the rising incidence of tobacco-related diseases in many countries, various techniques have been developed for assessing the annual rates of mortality and/or morbidity due to tobacco use, particularly smoking.

Question 2.5

The table requests data on the total number of deaths attributable to tobacco use over all ages. If data are available by age group, and/or for specific forms of tobacco use (e.g. cigarettes), please provide them. As for Question 1.5, the two periods may each comprise one or more calendar years, and should be approximately one decade apart.

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The table also requests information on the annual number of tobacco-attributable deaths coded to the major tobacco-related diseases, e.g. lung cancer. If desired, more specific categories may be reported. Thus "other cancers" may be further subdivided into oral cancer and/or oesophageal cancer and/or laryngeal cancer, all of which are significantly associated with tobacco use. The term "cardiovascular diseases" covers all diseases of the circulatory system, although more specific diseases, e.g. ischaemic heart disease, may be identified if data are available. Chronic obstructive lung diseases refer primarily to chronic bronchitis and emphysema.

Question 2.6

Please specify how the mortality or morbidity attributable to tobacco use is assessed. (Techniques range from applying fixed proportions calculated from studies in other countries (e.g. 90% for lung cancer, 75% for chronic obstructive lung disease and 25% for cardiovascular disease) to the use of findings from national studies on relative risks for smokers, in combination with detailed prevalence data for the population.)

Question 2.8

A number of countries have been monitoring the cost of the tobacco epidemic including direct costs of medical care (e.g. duration of stay in hospital, costs of treatment and costs of admission) and economic losses arising from lost productivity (e.g. absenteeism from work). Please provide whatever data are available, for the latest available year(s), and for some period about 10 years earlier.

3. Economics and tobacco

This section deals with the revenue accrued through tobacco production, processing and taxation; or alternatively with the expenses incurred through tobacco imports for non-tobacco producing countries. If specific surveys have been conducted, please attach the results.

Questions 3.1 and 3.2

The answers to these questions should provide an economic profile of the tobacco or health situation in individual countries, based on:

— revenue from production and manufacturing of tobacco products;

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— cost of imports (to assess the impact of tobacco imports on the balance of trade);
— revenue from taxation (to analyse the income for the government from customs and excise taxes);
— income from exports (to assess the impact of tobacco exports on the balance of trade).

Question 3.3

How is the income generated by the production, manufacturing and distribution of tobacco used? Is the revenue put to a specific use? Please provide details. Can the income generated by tobacco be linked to health and social development in the country?

Question 3.5

The answer to this question should mention any attempt, general or partial, made to replace tobacco by other crops (e.g. groundnuts, maize, fruits or vegetables). The results of these experiences should be evaluated in relation to the financial outcome for the grower and for the state (if applicable).

4. Health education

Please attach the text of relevant courses or curricula.

Question 4.2

Please include training and postgraduate training as well as "on-the-job" retraining.

Question 4.3

Some people are still not aware of the damage to their health caused by smoking and other uses of tobacco. The facts, along with recent findings, should be publicized through an information programme. In order to reach the widest public, all those involved in the health field should participate in the programme and all forms of the media should be used.

Question 4.5

Please include the names of any nongovernmental organizations that play a role in anti-tobacco education.

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5. Legislation

Please attach the text of the laws relevant to tobacco control.

Questions 5.1–5.3

The purpose of this section is to establish how much protection is given to the population against involuntary exposure to tobacco smoke. These measures may be valid nationally (legislation) or be the responsibility of local authorities (regulations).

Question 5.1

If the legislation provides for certain persons or communities to decide where smoking is permitted, it will be necessary to mention the main legislation and if possible to give an idea of the total impact of this legislation on smoke-free public places. If fines can be applied, please give details.

6. Behavioural, cultural and sociological factors

Surveys of public knowledge about tobacco could include questions on the harmful health consequences of tobacco use, the benefits of cessation, the hazards of passive smoking, etc. Public awareness may be assessed formally through national surveys or through more modest enquiries conducted at such places as the workplace. The nature of the survey should be specified.

7. General policy and programme matters

The issues mentioned in the six previous sections are often grouped in a tobacco control policy or programme. Many organizations and groups may play a role in the implementation of this policy or programme, the goal of which is a tobacco-free society. This set of questions is designed to determine the extent (and success) of the national policy and the organizations and groups involved.

Question 7.1

National focal points are usually located in the Ministry of Health, but in some cases a nongovernmental organization may be in charge of the coordination of and support for tobacco control activities.

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Questions 7.4 and 7.5

These questions attempt to evaluate the effectiveness and completeness of national control programmes. Any information that is available on this subject should be given, even if it does not fall directly within the framework of the questions.

SELECTED WHO PUBLICATIONS

Price (Sw.fr.)*

Smokeless tobacco control.
Report of a WHO Study Group.
WHO Technical Report Series, No. 773, 1988 (81 pages) 11.—

Smoking control strategies in developing countries.
Report of a WHO Expert Committee.
WHO Technical Report Series, No. 695, 1983 (92 pages) 10.—

Controlling the smoking epidemic.
Report of the WHO Expert Committee on Smoking Control.
WHO Technical Report Series, No. 636, 1979 (87 pages) 9.—

It can be done: a smoke-free Europe.
Report of the First European Conference on Tobacco Policy.
WHO Regional Publications, European Series, No. 30, 1990
(67 pages) 18.—

Noncommunicable diseases: a global problem.
World Health Statistics Quarterly, Vol. 41, No. 3/4, 1988
(72 pages) 23.—

Women and health.
World Health Statistics Quarterly, Vol. 40, No. 3, 1987 (96 pages) 21.—

Prevention in childhood and youth of adult cardiovascular disease: time for action.
Report of a WHO Expert Committee.
WHO Technical Report Series, No. 792, 1990 (105 pages) 12.—

Health needs of adolescents.
Report of a WHO Expert Committee.
WHO Technical Report Series, No. 609, 1977 (49 pages) 7.—

Further information on these and other WHO publications can be obtained from Distribution and Sales, World Health Organization, 1211 Geneva 27, Switzerland

* Prices in developing countries are 70% of those listed here.

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UNITED STATES CIGARETTE EXPORT ASSOCIATION

Worldwide Decline in Smoking

March 16, 1992

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Worldwide Decline in Smoking

Anti-smoking activists have attempted to alarm the public by asserting that there is a "worldwide smoking epidemic", and particularly an "epidemic" of smoking in the Third World. This is an incorrect notion, both worldwide and with respect to the Third World. Nevertheless, it has been frequently repeated by career anti-smoking activists,[1] and its correctness was assumed by certain members of the United States House of Representatives in their 1990 request to the General Accounting Office to conduct an investigation of the international marketing practices of the United States tobacco companies.[2]

Per capita consumption of cigarettes has, in fact, been steadily declining on a worldwide basis over the last decade. The total production of cigarettes throughout the world[3] divided by world population[4] showed 1981 consumption of almost 1,200 cigarettes per person, falling below 1,100 five years later, and further reduced to less than 1,000 in 1990.

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[1] Dr. Judith M. McKay, a career anti-smoking activist, testified to a May 17, 1990 Congressional subcommittee: "The problem is that the bulk of that increase [in cigarette related deaths] will not lie in countries like the United States. They will lie in the Third World. . . And the Third World simply cannot afford this kind of epidemic." In October, 1988, her article, "The Tobacco Epidemic Spreads," was published in *World Health.*

The American Medical Association several years ago issued a report entitled: "Impact of United States Tobacco Exports on the Worldwide Smoking Epidemic."

[2] The October 23, 1990 letter from Representative Chester G. Atkins, joined by nineteen other members of the House of Representatives, said, in relevant part: "we believe your review will greatly assist the Congress in its deliberations of the various legislation (*sic*) addressing the control of the worldwide smoking epidemic."

[3] For purposes of this paper, cigarette production, import and export figures referred to are those reported by the United States Department of Agriculture, Foreign Agricultural Service, *World Tobacco Situation*. Data in this paper do not include either cigarette or population figures for the People's Republic of China, which are considered to be unreliable, are anomalous to general trends and which relate to a market where the international cigarette business is a trivial factor, representing a fraction of one percent.

[4] Data for the years 1980 through 1988 are drawn from the United Nations *Demographics Yearbook-1988*, and for the years 1989 and 1990 from the United Nations *World Population Prospects.*

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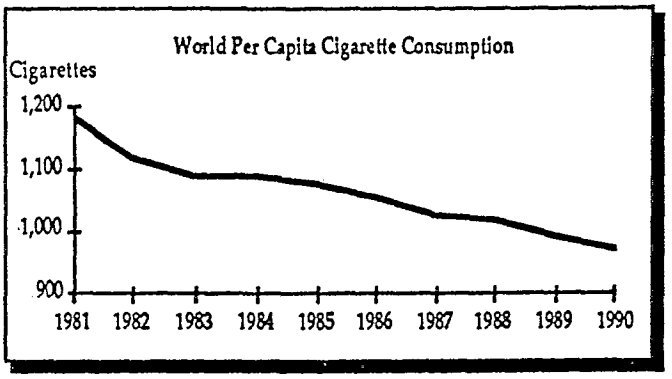

Figure 1

The steady reduction in the worldwide rate of cigarette consumption shown in Figure 1 exceeded twenty percent over the period. The term "epidemic" for such a phenomenon is not only inappropriate and misleading -- it is the opposite of the truth. "Epidemic" means an outbreak or product of sudden rapid spread, growth or development. It cannot be correctly, or even honestly, applied to a situation of persistently declining incidence.

The misconception that there exists a worldwide epidemic of smoking is propagated by career anti-smoking activists who have succeeded in inducing many people into believing that the mythical epidemic is particularly acute in the Third World. Yet the data reveal that there is not, and there has not been, an epidemic of smoking in the third world at all, much less a particularly acute epidemic. As shown in Figure 2, there has actually been a decline in the rate of cigarette smoking in the Third World of more than ten percent over the past decade.[5]

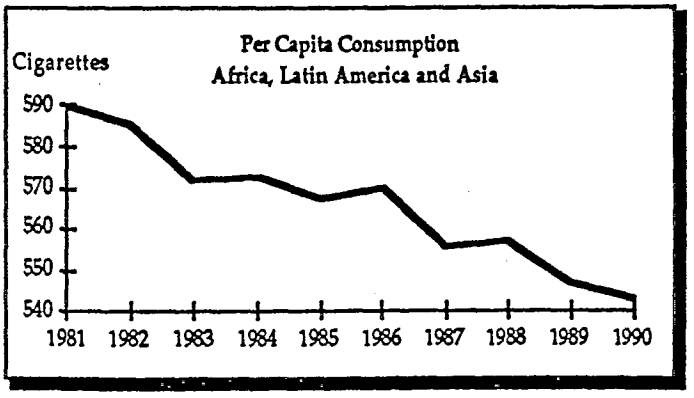

Figure 2

[5] These data are based on local production plus imports, less exports.

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Even in what had been the Soviet bloc, smoking has been characterized by a definite downward trend. Figure 3 shows that over the last decade per capita consumption of cigarettes has declined in every part of the world: in the industrialized countries of the OECD,[6] in Eastern Europe, in Africa, in Latin America, and in Asia.

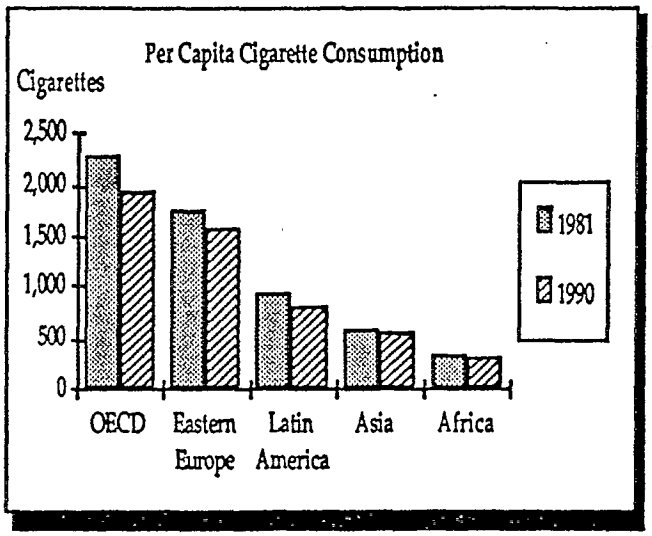

Figure 3

It has been suggested by anti-smokers that while smoking is declining in rich countries, the less educated and protected people in poor countries are taking up the practice more and more.[7] When looked at in relative terms, the data reveal that although the decline in

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6 The Organization for Economic Cooperation and Development's membership is: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States.

7 "The data indicates . . . that smoking rates are declining in the Western world at the rate of two percent a year, but rising in the developing world at the rate of two percent. . . . American men who wear ties are quitting and what are we trading these people who wear ties for, but these people here?" Gregory Connolly, DMD, career anti-smoking activist.

"The U.S. tobacco industry, frustrated by America's increasing concern about the known serious dangers of smoking and the declining percentage of Americans who do smoke, have turned their attention to creating new markets in Asia and Africa." U.S. Representative Robert Whittaker.

"For every smoker who quits in Boston or Baltimore, new smokers are being targeted and aggressively recruited by U.S. tobacco companies in Bangkok and Beijing." U.S. Representative Henry Waxman.

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per capita cigarette consumption has been greater in the OECD (the twenty-four most industrialized countries) than in the rest of the world, it was starting from a considerably higher base in the OECD. Indeed, over the last decade while per capita cigarette consumption declined 16% in the OECD it fell, on average, 10% in the rest of the world where the base was already considerably lower.

It is significant that these fall-offs in cigarette consumption have taken place against a strong contrary trend of consumption patterns for other consumer, packaged, non-essential items. As can be seen in Figure 4, there has been a pattern of rapid growth among soft drinks[8] in each region of the world, while the consumption pattern for cigarettes has been clearly negative.

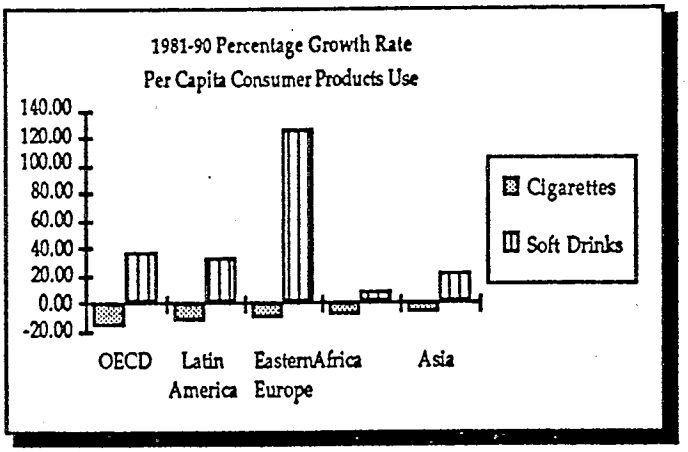

Figure 4

Finally, although an epidemic should be considered relative to the size of the population concerned, it is noteworthy that not only on a per capita scale, but even on an absolute scale, there are fewer cigarettes manufactured today than there were a decade ago. Indeed, over the ten year period the world production of cigarettes has been, on average, more than a billion fewer each year.[9] Consequently, by no definition can it properly be said that there is a "worldwide epidemic of smoking." Instead, there is a worldwide decline in smoking.

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[8] Source: Beverage Marketing Corporation.

[9] USDA, FAS, *World Tobacco Situation* reports for the period. See also, United States International Trade Commission, Office of Industries, Publication 2462 (AG-2), November 1991, *Industry & Trade Summary, Cigarettes*, p.4 ,"world production of cigarettes, excluding China's, has been stable." Growth of consumption in the isolated People's Republic of China cannot fairly be parlayed into a worldwide phenomenon which it is not.

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

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Smoking and health 1987. M. Aoki et al, editors

SMOKING AMONG NORWEGIAN DOCTORS 1952-84

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A 1984 survey on Norwegian doctors was used to update earlier conclusions from similar surveys in 1952[1] and 1974[2]. The 1984 survey included for the first time questions regarding doctors' intervention with patients. 91% of a stratified sample of members of the Norwegian Medical Assosiation responded to the mailed questionnaire, 435 female and 969 male physicians. As smoking varies systematically by age, the general population was ageadjusted to match the doctors' age distribution. The figures given for the general population in this paper may therefore differ from official Norwegian figures.

RESULTS:

Smoking Habits:

In 1984, 18.6% of male doctors were smokers, whereas in the Norwegian population at large 46% were smokers. Only 11.4% of female doctors smoked compared to 41% of all Norwegian women. There seems to be a widening gap between the doctors and the lay population, because the differences are more marked in the younger age groups, and because more doctors than lay persons want to quit smoking.

In comparison both to 1952 and to 1974 there was in 1984 a further considerable decrease in the proportion of doctors who smoke, both within and across age cohorts. (not the same persons), with the exception of persons 65 years of age and older. The decrease in smoking among males is much steeper among doctors than in the Norwegian male population. Smoking proportions are increasing in the female population, and reducing sharply among female physicians. (Fig. 1)

Cessation:

25% of male and 15% of female doctors are now ex-smokers, from this it may be inferred that 2.400 Norwegian doctors have quit smoking. The doctors who continue smoking have not cut down on their tobacco use. The mean consumption per smoker was 14 cigarettes per day for male doctors and 12 cigarettes per day for female doctors. This difference is almost identical to the doctors' consumption in 1974 and to the consumption of the general population in 1984.

Do doctors intend to quit?

When asked to predict their smoking habits in 5 years, only 11% of male doctors and 4% of female doctors who smoke were certain that they would smoke in 1989, whereas 40% of the men and 54% of the women think it likely or certain that they will quit smoking. If their own predictions were true, the overall rates of smoking in 1989 would be 11% for male doctors and 5% for female doctors.

Smoking Intervention:

A new feature of the 1984 survey was the inclusion of questions on doctors'

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Source: https://www.industrydocuments.ucsf.edu/docs/tyhl0000

activity in advising patients about the health effects of smoking and to recommend changes in patients' smoking habits. 48% of male and 42% of female doctors who had opportunities to discuss smoking with patients, say that they question all patients on smoking. Scores on a smoking intervention index reflect physicians' own smoking behavior: Non-smoking doctors score higher than smoking, never-smokers score higher than ex-smokers, younger doctors higher than older, and GPs higher than hospital doctors.

Multiple regression showed that for males, being a GP was the most important factor in predicting high intervention activity, followed by young age, low tobacco consumption and being a company doctor. The same four factors were most important for female doctors. However, there were only 14 female company doctors. Specialists, hospital doctors and graduates from non-Norwegian medical schools had negative regression coefficients, showing relatively lower activity.

Turning to the individual items that made up the smoking intervention index, no differences are seen between smokers and non-smokers regarding advice to patients with smoking related symptoms, or to women who were pregnant or on oral contraceptives. Non-smoking physicians were, however, more likely to discuss smoking with all smoking patients. They were also more interested in helping patients quit smoking.(Fig.1)

DISCUSSION:

It is of great importance to have high response rates when inferring smoking habits, and when comparing 1984 figures with earlier surveys that were conducted when pressure to stop smoking was less. 30% of late responders were smokers compared to only 17% of early responders.

If the present trend of reducing smoking proportions by 1.7% per year for male and by 1.0% per year for female doctors continues, Norwegian doctors will be smoke-free by 1996. Although the non-smoking goal is unlikely to be met for the general population, it is encouraging to see that doctors at least are reducing their smoking at such a rapid rate. (Fig.1.)

Measured by the smoking intervention index, younger doctors show more interest in smoking and health. This may reflect that the education of medical students now emphasizes preventive measures generally, and towards smoking in particular. It is very unfortunate that older doctors and specialists tend to be less interested in their patients' smoking, as they are often sought for second opinions. If consultants do not inquire about smoking, patients may use this as an excuse to ignore the advice of the referring GP.

CONCLUSIONS:

1. A considerable decrease in the proportion of smoking doctors occurred during the period from 1952 to 1984, from 74.6% to 18.6% for men, and from 44.5% to 11.4% for women. The decrease in smoking is partly due to smoking cessation and

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partly due to fewer smokers among younger doctors.

2. Smoking and non-smoking doctors alike give information on smoking and health to patients who report smoking related symptoms. However, general smoking and health information as well as assistance in breaking the habit, are more frequently given by non-smoking doctors. Young, non-smoking GPs are the most active in this regard.

Figure 1. PERCENT SMOKERS AMONG NORWEGIAN DOCTORS IN 1952-1984 AND IN THE GENERAL POPULATION 1956-1984, AGE ADJUSTED
Thurmer & Bjartveit

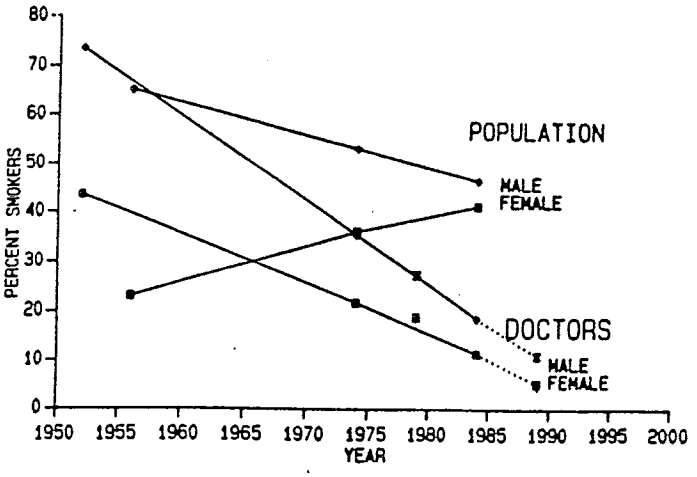

Table 1. % DOCTORS DISCUSSING SMOKING BY PATIENT SITUATION, N=582, MALES. COMPARING GPs TO HOSPITAL DOCTORS, OR SMOKERS TO NON-SMOKERS

PATIENT SITUATION:	GPs	Hospital doctors	Daily smokers	Non-smokers
Smoking related symptom	100	99	100	99
Pregnant	98***	77	84	87
On oral contraceptives	93***	63	72	77
Daily smoker	65*	51	33	61***
All patients	36	55*	39	52**
DOCTORS WHO WOULD:				
Motivate smokers to quit	84**	69	56	79***
Host cessation groups	17**	13	7	16***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Ref.1. Kreyberg HJA. A study of tobacco smoking in Norway. Br J Cancer 1954;8:13

2. Aarø LE. et al. Smokinbg habits among Norwegian doctors 1974. Scand J Soc Med 1977;5:127-35.

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ACTION PLAN "SMOKEFREE NORWAY YEAR 2000"

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ABSTRACT

An action plan "Smokefree Norway Year 2000" was prepared by the Norwegian Association against Tobacco, the Norwegian Asthma and Allergy Association, the Norwegian Cancer Society, the Norwegian Confederation of Sport, the Norwegian Coordinating Boards of Health Education, the Norwegian Medical Association, and the Norwegian National Health Association. The action plan was presented to the Minister of Health and Social Affairs in January 1989.

The action plan discusses the use of tobacco in Norway and related health effects. Concrete targets and time limits for different actions are suggested. The importance for the Government to have an active policy against tobacco is stressed. Actions such as the increase of tobacco prices, the reduction in the availability of tobacco, and the creation of more smoke-free areas are necessary. The largest resources should be used to prevent adolescents from starting to smoke. A work group with representatives from the Department of Health and Social Affairs, the Directorate of Health, the National Council on Smoking and Health and from the organizations that have signed the action plan has been appointed. The work group is an advisory group and a forum for coordination of the campaign against tobacco. The work group will in addition have the responsibility of evaluating the progress of the action plan.

THE NEED FOR AN ACTION PLAN AGAINST TOBACCO

The Norwegian Parliament was one of the first parliaments to discuss a program against smoking. In 1969, the Norwegian Parliament announced a national program against smoking. Tobacco advertising was banned in 1974. Subsequently, health warnings have been introduced on cigarette packets, packets of smoking tobacco and packets of cigarette paper. The Norwegian Medical Association's board took a resolution to the Government to work for "Smokefree Norway by the year 2000". The two last Governments have both agreed on this goal. In 1988 we got an act protecting people against passive smoking.

Although Norway, in many respects, has been a pioneer in the campaign against tobacco, the prevalence of smoking in Norway has changed very little during the last eight years. Thus, it is apparent from fig. 1 that the prevalence of daily smoking among men was reduced from 52% in 1973-74 to 40% in 1981. This percentage has remained nearly constant since then. Among women the prevalence rate of regular smoking has been constant, about 32-33% since 1973.

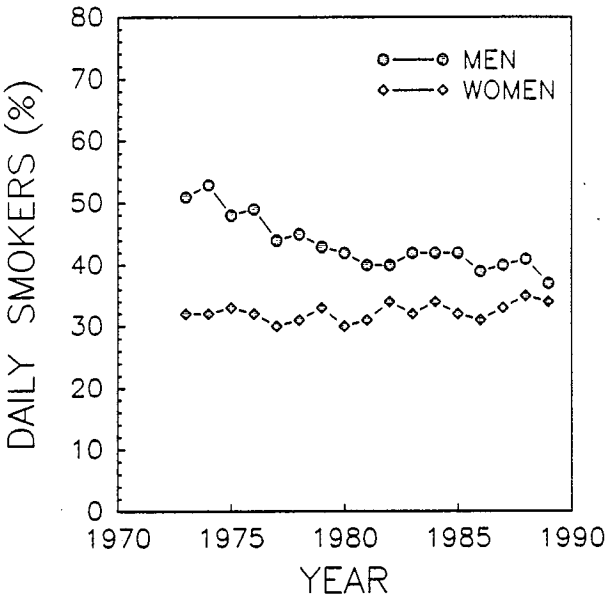

Fig 1. Prevalence of daily smoking in Norway in the age group 16 - 74 years.

The absence of changes in the prevalence of regular smoking in the Norwegian population, gives the impression that only small changes in smoking habits have occurred during the last years. This is, however, not the case. If we consider different groups of the population, considerable changes have occurred. In 1952 about 75% of male medical doctors smoked, while in 1984 the prevalence rate had been reduced to 19%. Moreover, an inverse correlation between smoking and educational status is clearly shown in a recent study from the Norwegian Council on Tobacco and Health (Fig 2). The study shows that in the period 1987-89, the prevalence of male regular smokers in the age group 20-30 years was nearly 4 times higher among those with only basic education than among college and university graduates. Those with high school and some college education fell half way in between. Among women in the age group 20-30 years, the pattern was similar, although the prevalence rate of smoking was higher among college and university graduates.

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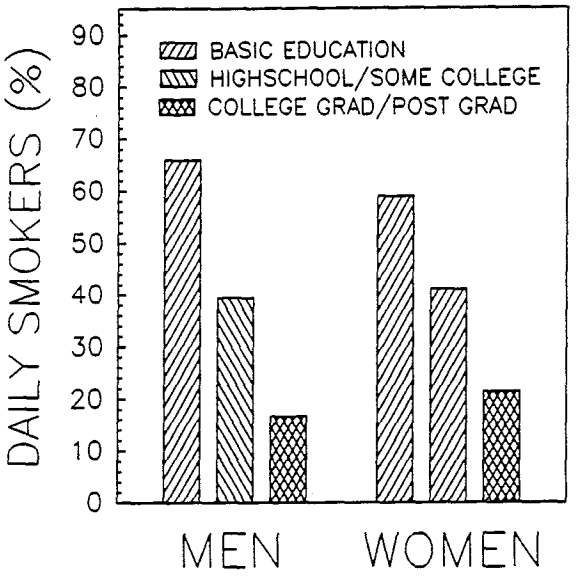

Fig 2. Prevalence of daily smoking in the age group 20 - 30 years in the period 1987 to 89 in groups with different education.

During the period when the prevalence of regular smoking was constant in Norway, the prevalence of regular smoking in the USA was reduced by between 1/3 and 1/4. In Finland, Sweden and the USA, the prevalence of regular smoking is considerably lower than in Norway. During the last years Norway has been lagging behind in reducing the use of tobacco. This was one of the reasons for the Norwegian Cancer Society, the Norwegian Association against Tobacco, the Norwegian National Health Association, the Norwegian Asthma and Allergy Association and the Norwegian Coordinating Board on Health Education to prepare, in 1986, an action plan for "Smokefree Norway Year 2000." A new action plan was prepared on the basis of activities to reduce the use of tobacco in Europe during the last years. The present action plan is based on recommendations from the World Health Organization, Regional Office for Europe "A 5 Year Action Plan, Smoke Free Europe" and recommendations from the First European Conference on Tobacco Policy (organized by WHO in Madrid 7-11.11.88). Moreover, recommendations from The Sixth World Congress on Tobacco and Health and the action plans against cancer by the European Community and the Nordic Council, have been taken into consideration. In addition to the organization which prepared the first action plan, the Norwegian Medical Association and the Norwegian Confederation of Sport have participated in the new action plan which was presented to the Secretary of Social Affairs in January 1989.

THE STRATEGY OF THE ACTION PLAN

In the new action plan, concrete aims and time limits are set. Some of the reforms may seem unrealistic and provocative. It is then important to remember that many reforms which are commonly accepted today, seemed unrealistic just a few years ago. Moreover, the attitudes towards tobacco and the use of tobacco has changed considerably during the last few years. The important goal of a "Smokefree Norway Year 2000" has great support among the Norwegian people today.

Knowledge by all smokers of the health risks of tobacco is not sufficient to reach the goal "Smokefree Norway Year 2000". The Government must have a policy which makes it easier for the individual to decide not to use tobacco. This can be achieved by pressure on social, cultural and economic factors, so that individuals and groups that use tobacco proceed to quit, and new groups do not start to use tobacco. The increasing number of Norwegians who travel abroad and the flow of information between countries, make a united European campaign against tobacco very important.

The following sectors must be involved in the Action Plan for Smokefree Norway Year 2000:

Health authorities and other authorities as well as health personnel.

Parliament and politicians, both local and national.

Education establishment from nursery to university and adult education.

Business and industry.

Humanitarian organizations, interest groups, trade unions and sports- and youth- organizations.

Mass media (TV, radio, video, cinema, theatre).

The Department of Social Affairs has the responsibility for realization of the action plan against tobacco. The National Council on Tobacco and Health has a key part in this work. It was also suggested in the plan that a work group should be formed with representatives from the Department of Social Affairs, the Directorate of Health, the National Council on Tobacco and Health and the organizations which have signed the action plan. This work group was appointed by the Department of Social Affairs in April 1989, and is an advisory group and a forum for coordination. The work group is in addition responsible for evaluating the advancement of the action plan.

The Action Plan for Smokefree Norway Year 2000 is summarized in Table I. The greatest resources should go towards preventing adolescents from starting to smoke. The reason for the focus on adolescents is based upon studies done by The National Council on Tobacco and Health. The studies have shown that 75% of the smokers in Norway today started before they were 20 years old.

Changes in attitudes towards tobacco are critical. It is important to stress both the positive aspects of giving up smoking and the damage to health caused by tobacco. Work to change attitudes among adolescents is especially important in preventing young people from starting to smoke, and this is given the highest priority. Parallel to the provision of information, it is important to start smoke cessation groups among people who are trend-setters for adolescents.

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Health personnel, teachers in the wider sense as well as sport and youth leaders have a considerable responsibility as trend-setters. It is important that these groups get special information and help with smoking cessation.

Sales of cigarettes from vending machines should be stopped. The legal age for buying tobacco should be increased from 16 to 18 years. In more than half of the states in the USA, the legal age for buying tobacco is 18 years or higher.

Since children are especially vulnerable to the health damaging effects of tobacco smoke, pregnant women and parents of young children are priority groups for information and help with smoking cessation.

A subgroup of the work group for "Smokefree Norway Year 2000" in charge of preparing a separate action plan for a smoke-free health institution, has recently been appointed by the Department of Social Affairs. This subgroup has

Table 1: SUMMARY OF THE ACTION PLAN "SMOKE FREE NORWAY YEAR 2000"

Project	1990	1992	1995
PROJECTS THAT WILL CONTINUE UNTIL THE YEAR 2000			
Information to change attitudes towards tobacco. Information to adolescents will have the highest priority.			
Smoke cessation projects: Smoke cessation groups among employees in the health and education sectors and among sports and youth leaders will have the highest priority. Companies will be encouraged to help employees to give up smoking.			
PROJECTS WITH TIME LIMITS			
NATIONAL PROJECTS			
Protection of non-smokers	Smokefree health institutions	Totally smoke-free educational institutions 1/3 smokefree hotels and restaurants	Totally smokefree health institutions 1/2 smokefree hotels and restaurants. Smokefree youth centres. All public and official places completely smokefree
Protection of children	Regulations for indoor air quality		
Reduced availability	Vending machine sales stopped		Legal age for buying tobacco 18 years. Licensing of sale of tobacco.
New tobacco products	Ban of sale		
Price rise	Tobacco excluded from cost-of-living index (more than 20% increase in price every year)	Duty free import stopped	
Restriction on snuff and chewing tobacco	Health warnings		Ban on sale
INTERNATIONAL PROJECTS			
Smokefree flights	Between the Nordic countries	Europe	The world
Duty free sales stopped		Nordic countries	Europe
PARTIAL AIMS. 80% non-smokers and 50% reduction in sales by 1995.			

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representatives from all of the different groups employed in health institutions as well as from the owners and from patients. The subgroup will have an action plan for smokefree health institutions ready within one year. The action plan for smokefree health institution will thus have support from the unions organizing the employers of hospitals and other health institutions. The National Institute for Public Health in Norway was completely smokefree from 1 April 1990.

A second subgroup will probably be appointed before the summer of 1990. This subgroup will prepare a separate action plan for smokefree schools. The subgroup will have representatives from the different organizations for teachers as well as other groups working in schools, and from the students.

The goal of "Smokefree Norway Year 2000" may seem unrealistic to many as there is only ten years left. However, we have all seen during the last few months that changes have occurred in Europe that nobody would have believed were possible only a year ago. In the fight against tobacco it is necessary to be optimistic and to set ambitious goals.

This communication is based on:

Koefoed N, Nordahl V, Grimsrud TK, Sanner T (editor), Stenmarck S, Heimdal A, Svennevik E. Action plan. Smokefree Norway year 2000. Pp 23 (In Norwegian, translated to English by S. Everington and T. Sanner, 1990), Oslo 1989.

The use of tobacco is the largest single avoidable cause of ill health and premature death. About 6,000 people die every year in Norway from tobacco related diseases. The use of tobacco is responsible for about 45% of all deaths among men in the age group 35-54 years.

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GENDER DIFFERENCES IN TOBACCO USE IN AFRICA, ASIA, THE PACIFIC, AND LATIN AMERICA

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Abstract—This paper reviews historical, anthropological and contemporary survey data concerning gender differences in tobacco use in Africa, Asia, the Pacific, and Latin America. In many cultural groups in these regions, tobacco use has been substantially more common among men than among women. In some groups, tobacco use has been about equally common for both sexes. No evidence was found of any group in which tobacco use has been substantially more common among women.

The widespread pattern of greater tobacco use by men appears to be linked to general features of sex roles. For example, men have often had greater social power than women, and this has been expressed in greater restrictions on women's behavior, including social prohibitions against women's smoking. These social prohibitions against women's smoking have strongly inhibited women's tobacco use and thus have been a major cause of gender differences in tobacco use.

Gender differences in tobacco use have varied in magnitude, depending on the type of tobacco use and the particular cultural group, age group and historical period considered. Causes of the variation in gender differences in tobacco use include variation in women's status and variation in the social significance and benefits attributed to particular types of tobacco use in different cultures. Contact with Western cultures appears to have increased or decreased gender differences in smoking, depending on the specific circumstances.

The patterns of gender differences in tobacco use in non-Western societies are similar in many ways to the patterns observed in Western societies, but there are several important differences. For example, current evidence indicates that in many non-Western societies women have been more likely than men to quit smoking, in contrast to most Western societies where men have been as likely or more likely than women to quit smoking.

Key words—smoking, tobacco use, gender, sex differences, cross-cultural

INTRODUCTION

This paper reviews historical, anthropological and contemporary survey data concerning the patterns and causes of gender differences in tobacco use in Africa, Asia, the Pacific, and Latin America. Early anthropological evidence for native Americans in North America is also reviewed. Evidence concerning gender differences in smoking in Western societies is reviewed in another paper [1].

The topic of gender differences in tobacco use is of interest in part because men's higher rates of cigarette smoking have been a major cause of men's higher mortality in Western countries [2, 3]. In addition, the observed patterns of gender differences in tobacco use raise interesting questions concerning the causes of gender differences in behavior. For many different cultures and historical periods there is evidence that more men than women have used tobacco, and no evidence has been found for a reverse case, in which substantially more women than men have used tobacco. What causes can account for this widespread male excess in tobacco use? Additional questions are raised by the cross-cultural and historical variation in the magnitude of gender differences in tobacco use. The observed gender differences range from almost exclusively male use of tobacco in some groups to approximately equal rates of tobacco use for men and women in other groups. What causes are responsible for this variation in the magnitude of gender differences in tobacco use? This paper first summarizes the patterns of gender differences in tobacco use in non-Western societies and then reviews evidence concerning possible causes of these patterns.

HISTORICAL AND ANTHROPOLOGICAL EVIDENCE

Native Americans

Anthropological evidence for several native American groups in North America suggests that, in the late nineteenth and early twentieth centuries, tobacco was used primarily in ritual contexts and ritual use of tobacco was in most cases restricted to men [4, 5]. By the second quarter of the twentieth century, nonritual use of tobacco had become common and women as well as men engaged in nonritual use of tobacco.

For quite a few Central and South American groups studied in the twentieth century, the use of tobacco appears to have been exclusively or primarily nonritual. Gender differences in nonritual use of tobacco varied from use by men only to extensive use by both women and men [5–7]. No evidence was found of a group in which women used tobacco more than men.

Asia

Historical evidence indicates that tobacco use was introduced in much of Asia early in the seventeenth century. In this early period in Korea and Japan, tobacco use was widespread among both women and

*Author for correspondence.

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men [8, 9]. Even as recently as the late nineteenth century, most Korean women and men smoked pipes [10]. However, by the mid-twentieth century in Korea and Japan, smoking was restricted primarily to men [9, 11, 12]. Thus, in these countries, there has been an historical transition from tobacco use by both women and men to tobacco use primarily by men.

Anthropological studies of Asian groups in the mid-twentieth century indicate a variety of patterns of gender differences in tobacco use, including some groups in which tobacco use has been rare among women and other groups in which tobacco use has been almost universal among both women and men [9, 13, 14]. No group was identified in which women used tobacco more than men.

Africa

Gender differences in tobacco use in Africa have varied for different cultural groups, different historical periods and different types of tobacco use. In some groups tobacco use has been much more common among men than among women, while in other groups tobacco use appears to have been equally extensive among women and men or absent among both women and men [15–19]. In a number of cases, closely neighboring groups have shown very different patterns of gender differences in tobacco use. Gender differences have also varied for different types of tobacco use. For example, evidence for the Masai and Samburu in Kenya indicates that women are as likely as men to use smokeless tobacco, but only men smoke cigarettes [16]. In a few African groups, a specific type of tobacco use was more common among women than among men. However, in each case, when all types of tobacco use are considered together, it appears that men were as likely as women to use tobacco [15].

Limited data suggest that in some groups the patterns of gender differences or lack of gender differences in tobacco use have been relatively stable historically [15, 17, 19]. In other cases gender differences in tobacco use have varied historically, for example, when cigarette smoking has been introduced and has been adopted by men only [16].

CONTEMPORARY SURVEYS

This section reviews findings from surveys in Africa, Asia, the Pacific, and Latin America from 1960 through 1985. In almost every group studied, smoking has been more common among men than among women (Figs 1 and 2) [20–26]. The magnitude of gender differences in the prevalence of smoking has varied considerably for different countries and for different regions or cultural subgroups within a country. In a few groups, there has been little or no gender difference in the prevalence of smoking. No group was found in which smoking was substantially more common among women than among men.

Smokeless tobacco use appears to have been much less common than smoking. In several groups that did use smokeless tobacco, there was little gender difference in smokeless tobacco use, even though men were more likely than women to be smokers [23, 27]. In contrast, for another group, more men than

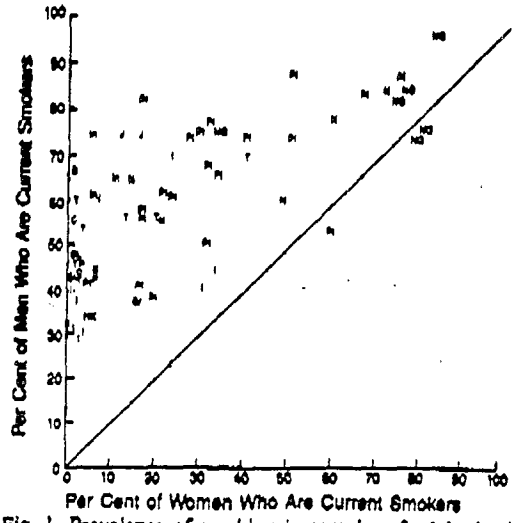

Fig. 1. Prevalence of smoking in samples of adults in the general population in different regions in Asia and the Pacific, 1960–1985. Letters designate country of sample: B—Bangladesh, Br—Brunei, C—China, HK—Hong Kong, I—India, In—Indonesia, J—Japan, M—Malaysia, N—Nepal, NG—New Guinea, PI—Pacific Islands, P—Pakistan, S—Singapore, SL—Sri Lanka, T—Thailand. Data from Refs [27–33, 35–37, 41–44, 53–60].

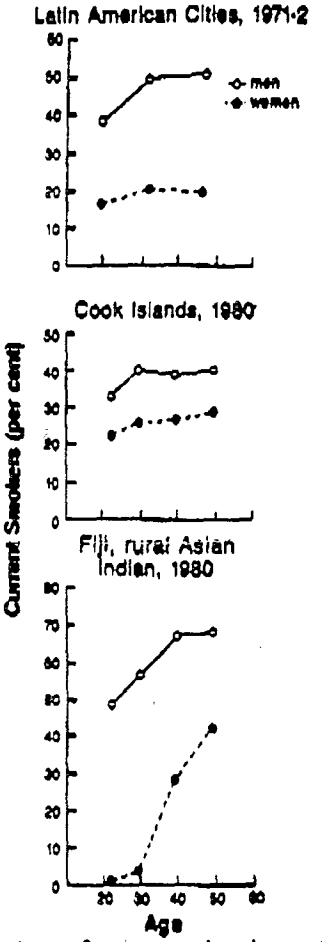

Fig. 2. Prevalence of current smokers by age for men and women in selected non-Western samples. Data from Refs [34, 36].

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women used smokeless tobacco, but men and women were equally likely to be smokers [27].

Gender differences in tobacco use have also varied for different types of smoking. In several countries where more men than women have been smokers, the male excess has been larger for use of manufactured cigarettes and imported tobacco and smaller or absent for use of indigenous products made from locally grown tobacco [28–31]. Regional variation in New Guinea shows a corresponding pattern [32, 33]. In highland regions where home-grown tobacco was generally used, smoking has been as common among women as among men. In contrast, in a coastal region where manufactured cigarettes were generally used, smoking was much less common among women than among men (although by 1981 this gender difference had decreased substantially).

Gender differences in smoking have also varied by age in many groups, although the pattern of variation by age has been different in different groups (Fig. 2) [21, 26, 28–30, 34–36]. In many groups gender differences in smoking have been smaller for older adults, probably because women have adopted smoking at older ages than men. Surveys in Singapore and Latin American cities have shown that, on the average, women smokers began smoking at older ages than men smokers [34, 37]. Studies of children and teenagers have found that boys have been more likely to experiment with cigarette smoking and, in most groups, among those who had experimented with smoking, boys have been more likely to become regular smokers (calculated from data in Refs [38–40]).

With regard to gender differences in the amount smoked per smoker, in most groups men have smoked more per day, although in a few cases no substantial gender difference has been observed [20, 21, 23, 29, 34–36, 41, 42]. Limited evidence also indicates that, among smokers, men have been more likely to inhale and less likely to use filter cigarettes [28, 34].

In order to evaluate gender differences in smoking cessation, I have calculated cessation ratios, that is, the proportion of former smokers among those who have ever smoked. Cessation ratios have been higher for women than for men in many groups, particularly in the Pacific Islands, and cessation ratios have been higher for men in only a few groups (Fig. 3; calculated from data in Refs [20, 26, 29, 36, 43, 44]).

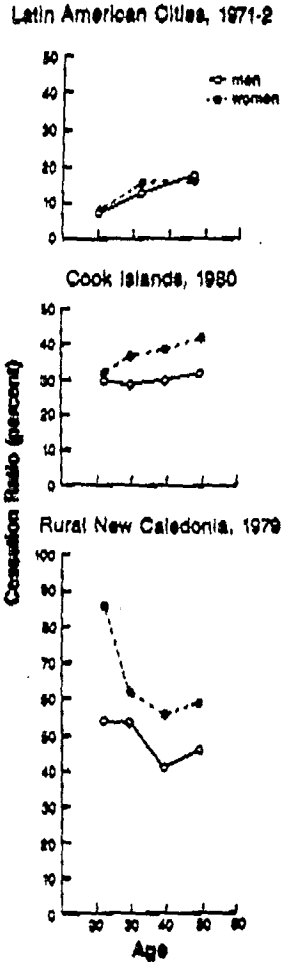

Fig. 3. Cessation ratios by age for men and women in selected samples. Data from Refs [34, 36].

CAUSES OF GENDER DIFFERENCES IN TOBACCO USE

The evidence presented indicates that, in most of the African, Asian, Pacific and Latin American groups studied, more men than women have used tobacco. In some cases tobacco use has been about equally common among men and women. None of the anthropological, historical or contemporary survey data has identified a group in which tobacco use has been substantially more common among women than among men.

Why do more men than women use tobacco in so many different societies, and why are there apparently no societies in which substantially more women than men use tobacco? When a gender difference is as consistent and widespread as the male excess in tobacco use, this is often taken to suggest biological causation. One hypothesis has been that there may be biological sex differences in nicotine metabolism that make females more likely to feel sick after first using tobacco, particularly if only high nicotine tobacco products are available [45]. If females are more likely to feel sick, they may be less likely to adopt tobacco use habits. However, evidence concerning this hypothesis has been highly inconsistent, and data from the United States suggest that any inherent sex differences in responses to nicotine have made at most a minor contribution to gender differences in tobacco use [1]. Also, data from New Guinea suggest that high nicotine tobacco is not necessarily a deterrent to high rates of smoking among women. In several regions of New Guinea, the native tobacco had a very high nicotine content, but, nevertheless, almost all women smoked [28, 32, 33]. Thus, the available evidence indicates that the widespread pattern of greater tobacco use by men is not due to inherent sex differences in nicotine metabolism.

A second hypothesized link between biological sex differences and gender differences in tobacco use is indirect and speculative. This hypothesis proposes that, because women bear and nurse children, and

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probably also because men tend to be larger and stronger, there has been a widespread cultural evolution of certain general patterns of women's and men's roles. For example, women have been largely responsible for the care of young children, and in many societies men have had greater power, status and privilege [46, 47]. It appears that there have been important links between the general features of sex roles and the widespread pattern of greater tobacco use by men.

Probably the most important feature of sex roles that has contributed to gender differences in tobacco use has been men's greater power and access to scarce resources in many societies. The following paragraphs present evidence that gender differences in power are reflected in greater restrictions on women's behavior, including widespread social proscriptions against women's smoking, and this social disapproval of women's smoking has been a major cause of gender differences in smoking.

Social disapproval of women's smoking has been reported from regions as diverse as Japan, Taiwan, India, Sri Lanka, Ethiopia and Kenya [13, 16, 31, 48–50]. Interview data from several different ethnic groups in contemporary Kenya indicate that restrictions on women's smoking are linked to women's lower status and power [16]. Respondents in most of these ethnic groups stated that smoking was proscribed for women, but men's behavior could not be restricted in this way; men were permitted to smoke because they were the 'boss'. In this study the Luo were the only group which espoused equality of women and men in decision-making, and the Luo were also the only group among whom women's smoking was considered socially acceptable and as many women as men smoked.

Additional evidence suggests that social disapproval of women's smoking has been linked to more general restrictions on women's behavior, particularly restrictions on women's sexual behavior. Smoking by women has been considered indicative of loose sexual morals in non-Western countries, as it was in Western countries in the early twentieth century [1]. In Japan around 1950, smoking by women was considered to be a habit of professionally promiscuous women such as prostitutes and geisha [50]. Similar opinions have been reported from parts of Africa [16] (Patrick Ohadike, personal communication, 1982). Since cigarettes are associated with Western influence, cigarette smoking may be thought to be more closely linked to lax morals than the use of native tobacco products. This could account for the observation that in some groups cigarette smoking is proscribed for women, but the use of smokeless tobacco by women is socially accepted and common [16]. Similar attitudes may contribute to the greater male excess for use of manufactured cigarettes and imported tobacco and smaller male excess for use of native tobacco in several regions in Asia and the Pacific [28–31].

In many groups, restrictions on women's behavior are generally stronger for young women, while older women have relatively more status and more freedom in their behavior. Correspondingly, it appears that in quite a few groups the proscription against smoking has been more rigid for younger women, and smoking has been more accepted and more common among older women [11, 13, 29, 51, 52].

Survey data for Latin American cities support the conclusion that social attitudes toward women's and men's tobacco use have been a major cause of gender differences in tobacco use (Table 1). More men than women were smokers (47 vs 18%), and the survey data indicate that the primary reasons for this gender

Table 1. Reasons for smoking or not smoking cigarettes, Latin American cities, 1971–2

	Percent who reported this reason		
	Men	Women	Sex difference
Reasons for starting to smoke regularly, for adults who had ever smoked regularly			
Sense of increased masculinity	23.2	0.0	23.2
Imitation of peer group	79.4	65.8	13.6
Sense of greater personal attractiveness	13.0	11.3	1.7
Desire to keep weight down	2.3	7.1	−4.8
Smoking by close relatives	19.7	28.0	−8.3
N	3123	1421	
Reasons for never having smoked, for adults who had never smoked regularly			
Feared loss of athletic capacity	14.4	5.4	9.0
Health	20.9	15.6	5.3
Feared loss of work capacity	12.0	8.5	3.5
Expense	8.4	7.6	0.8
Family influence	17.9	19.6	−1.7
Dislike of smoking	74.3	80.1	−5.8
Believed it unfeminine	0.0	30.1	−30.1
N	2485	5353	
Reasons for giving up cigarettes, for former smokers			
Felt sick when smoking	62.5	49.4	13.1
Reduced capacity for work, sports, etc.	32.2	19.1	13.1
Expense	11.2	10.4	0.8
Medical advice	27.3	27.0	0.3
Family influence	12.0	15.1	−3.1
N	497	201	

Data from Ref. [34].

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difference were that many women did not become smokers because they believed smoking to be 'unfeminine' and many men began smoking because smoking increased their sense of 'masculinity'.

Another aspect of traditional sex roles that has contributed to gender differences in tobacco use is men's greater access to scarce material resources. In some groups tobacco has been considered a scarce luxury that has been reserved exclusively or primarily for men, and in some groups men's greater use of tobacco has been explicitly linked to their role as earners [13, 16, 18]. In many contemporary groups, men have more money to spend on discretionary items, and this may be an additional reason why gender differences tend to be larger for cigarette smoking and smaller for the use of traditional products made from native tobacco.

Other aspects of sex roles appear to have contributed to gender differences in tobacco use. In a number of native American groups in the late nineteenth and early twentieth centuries, men's greater use of tobacco was directly linked to men's roles in rituals that involved tobacco use [4, 5]. In some groups, it is believed that a mother's smoking may harm her children and this inhibits women from smoking [16].

It has also been hypothesized that women are more concerned with health than men, and women's concerns about the health risks of tobacco use have contributed to women's lower rates of tobacco use. However, a survey in Latin American cities found that women were *less* likely than men to mention the health-damaging effects of smoking as a reason not to smoke (Table 1). Similarly, data from Kenya suggest that women were no more likely than men to mention health risks as a reason not to smoke [16]. Thus, in these societies, as in Western countries [1], it appears that women have not been more concerned than men with the health risks due to smoking, and health-related motivations have not been responsible for women's lower rates of smoking.

Thus far, this analysis of the causes of gender differences in tobacco use has identified several important links between traditional sex roles and men's higher rates of tobacco use. Men's greater status, power and access to scarce material resources have contributed to men's greater tobacco use. General restrictions on women's behavior have been reflected in social disapproval of women's tobacco use in many societies, and this social disapproval has been a major reason why women have used tobacco less than men. Thus, widespread features of traditional sex roles have contributed to the widespread pattern of greater tobacco use by men.

Another possible explanation for the widespread pattern of greater tobacco use by men could be that this pattern is the result of the pervasive influence of Western culture. For example, in several contemporary Pacific Islands it appears that a major reason why fewer women than men smoke is that the Christian church in the area has disapproved of women's smoking [44].

However, it is unclear how widespread or consistent an influence Westernization has had on gender differences in tobacco use in non-Western countries. For many native American groups, it appears that gender differences in tobacco use arose long before Western contact and, if anything, Western contact may have resulted in decreased gender differences in tobacco use, since Western contact may have fostered nonritual tobacco use by both sexes [4, 5]. In contemporary Latin America, greater formal education probably indicates more influence by Western culture. In contemporary Latin American cities more educated women, particularly university educated women, have been more likely to smoke and, as a result, gender differences in smoking have been smaller among more educated adults (calculated from data in Ref. [34]). This suggests that contact with contemporary Western culture may reduce gender differences in smoking. Thus it appears that contact with Western cultures has increased or decreased gender differences in tobacco use, depending on the specific circumstances, and this has been one cause of variation in gender differences in tobacco use.

Variation in gender differences in tobacco use may also be due to certain features of sex roles. For example, restrictions on women's behavior are generally greater for younger women of child-bearing age, and this may explain whey gender differences in tobacco use are greater for young adults in many cultures. Also, specific types of tobacco use may be more compatible with women's roles than men's roles and consequently these types of tobacco use may be more common among women. For example, in one region of India, more women than men smoked the hooka, apparently because the hooka is not very portable and hence is more easily used by the women who work primarily in the home [27]. In this region of India women and men were equally likely to be smokers, because women's higher rates of smoking the hooka were balanced by men's higher rates of smoking bidis (a type of native cigarette). Another aspect of sex roles that may influence gender differences in certain types of tobacco use is the greater emphasis on women's appearance in many cultures. This may explain why, in two regions of India, women were almost the exclusive users of particular types of smokeless tobacco believed to be useful for cleaning teeth [27]. In these regions women were as likely as men to use smokeless tobacco.

A final question concerns the reasons why, in many non-Western societies, women have had higher smoking cessation ratios than men. This question is of particular interest since in most Western countries in recent decades men have had as high or higher cessation ratios than women [1]. Self-reported reasons for quitting smoking are available for a sample from one region where women have higher cessation ratios than men (the Tonga Islands in the Pacific) [29]. The predominant reasons for quitting were different in the Tonga Islands than the reasons for quitting reported in regions where men have as high or higher cessation ratios than women (for example, Latin American cities and the United States) [1] (Table 1). The specific reasons that were important in Tonga may explain why smoking cessation ratios where higher for women. Forty-three percent of the Tongan ex-smokers stated that they had given up smoking for religious reasons. Since women often are more involved in religion than men, the predominance of religious reasons for giving up smoking may

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be one important cause of women's higher cessation ratios. In addition, 17% of female ex-smokers gave pregnancy as their reason for having quit smoking, and this was another important cause of women's higher cessation ratios.

In conclusion, sex roles have had a variety of important effects on gender differences in tobacco use. It appears that the widespread pattern of greater tobacco use by men may reflect certain general features of sex roles, including greater restrictions on women's behavior in many situations and a tendency for men to have greater access to scarce material resources. As modernization proceeds these features of sex roles are likely to change and women's rates of smoking are likely to increase in many non-Western societies. Given the major health-damaging effects of smoking, there is an urgent need to develop strategies to prevent increases in women's smoking, as well as strategies to reduce smoking in groups of men and women among whom smoking is already a common habit.

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